

CPC**COOPERATIVE PATENT CLASSIFICATION****B62D**

MOTOR VEHICLES; TRAILERS (steering, or guiding on a desired track, of agricultural machines or implements [A01B 69/00](#); wheels, castors, axles, increasing wheel adhesion B60B; vehicle tyres, tyre inflation or tyre changing B60C; connections between vehicles of a train or the like B60D; vehicles for use on rail and road, amphibious or convertible vehicles B60F; suspension arrangements B60G; heating, cooling, ventilating or other air treating devices B60H; windows, windscreens, non-fixed roofs, doors or similar devices, protective coverings for vehicles not in use B60J; propulsion plant arrangements, auxiliary drives, transmissions, controls, instrumentation or dashboards B60K; electric equipment or propulsion of electrically-propelled vehicles B60L; power supply for electrically-propelled vehicles B60M; passenger accommodation not otherwise provided for B60N; adaptations for load transportation or to carry special loads or objects B60P; arrangement of signalling or lighting devices, the mounting or supporting thereof or circuits therefor, for vehicles in general B60Q; vehicles, vehicle fittings or vehicle parts not otherwise provided for B60R; servicing, cleaning, repairing, supporting, lifting, or manoeuvring, not otherwise provided for, B60S; brake arrangements, brake control systems or parts thereof B60T; air-cushion vehicles B60V; motor-cycles, accessories therefor B62J, B62K; testing of vehicles G01M)

NOTE

In this subclass, the following terms are used with the meanings indicated:

- "vehicles" include motor vehicles and trailers;
- "trailers" include forecars or sidecars.

WARNING

The following IPC groups are not used in the CPC scheme. Subject matter covered by these groups is classified in the following CPC groups:

[B62D 25/13](#) covered by [B60J 1/20](#), [B60R 13/07](#) [B62D 25/22](#) covered by [B60R 3/00](#) [B62D 65/08](#) covered by [B60J 10/0088](#)

Steering of motor vehicles or trailers**NOTE**

Steering devices acting on ground-engaging wheels, endless tracks or the like and also applicable to aircraft are classified in [B62D 1/00](#) and relevant subsequent groups; these groups take precedence over [B64C](#); These elaborations also embrace steering of vehicles in general but applicable to land vehicles

B62D 1/00

Steering controls, i.e. means for initiating a change of direction of the vehicle

B62D 1/02

. vehicle-mounted

B62D 1/04

.. Hand wheels

B62D 1/043

... {with a device allowing single-hand operation of the steering wheel}

- B62D 1/046 . . . {Adaptations on rotatable parts of the steering wheel for accomodation of switches}
- B62D 1/06 . . . Rims, e.g. with heating means; Rim covers ([B62D 1/11](#) takes precedence)
- B62D 1/065 { Steering wheels with heating and ventilating means (heating and ventilating arrangements for spaces of vehicles [B60H](#))}
- B62D 1/08 . . . Spokes, e.g. resilient ([B62D 1/11](#) takes precedence)
- B62D 1/10 . . . Hubs; Connecting hubs to steering columns, e.g. adjustable ([B62D 1/11](#) takes precedence)
- B62D 1/105 {Non-rotatable hubs, e.g. the central part of the steering wheel not rotating(for storing airbags[B60R 21/2032](#))}
- B62D 1/11 . . . incorporating energy-absorbing arrangements, e.g. by being yieldable or collapsible (padded linings associated with the steering wheel [B60R 21/05](#); shock absorbers using plastic deformation of members in general [F16F 7/12](#))
- B62D 1/12 . . Hand levers
- B62D 1/14 . . . Tillers, i.e. hand levers operating on steering columns
- B62D 1/16 . . Steering columns
- B62D 1/163 . . . {Part of the steering column replaced by flexible means, e.g. cable or belt}
- B62D 1/166 . . . {Means changing the transfer ratio between steering wheel and steering gear (by continuous supply of energy, e.g. from electric motor [B62D 5/008](#); controlling steering depending on driving conditions sensed and responded to [B62D 6/00](#))}
- B62D 1/18 . . . yieldable or adjustable, e.g. tiltable (padded linings associated with the steering column [B60R 21/05](#))

NOTE

Group [B62D 1/181](#) takes precedence over groups [B62D 1/183](#) - [B62D 1/187](#).

- B62D 1/181 with power actuated adjustment, e.g. with position memory
- B62D 1/183 adjustable between in-use and out-of-use positions, e.g. to improve access
- B62D 1/184 Mechanisms for locking columns at selected positions {(locking of telescopic systems in general [F16B 7/10](#))}
- B62D 1/185 adjustable by axial displacement, e.g. telescopically ([B62D 1/183](#), [B62D 1/187](#), [B62D 1/19](#) take precedence)
- B62D 1/187 with tilt adjustment; with tilt and axial adjustment ([B62D 1/183](#), [B62D 1/19](#) takes precedence)
- B62D 1/189 the entire column being tiltable as a unit
- B62D 1/19 incorporating energy-absorbing arrangements, e.g. by being yieldable or collapsible (shock absorbers using plastic deformation of members in general [F16F 7/12](#))
- B62D 1/192 {Yieldable or collapsible columns}
- B62D 1/195 {Yieldable supports for the steering column}
- B62D 1/197 {incorporating devices for preventing ingress of the steering column into the passengers space in case of accident}
- B62D 1/20 . . . Connecting steering column to steering gear
- B62D 1/22 . . Alternative steering-control elements, e.g. for teaching purposes
- B62D 1/24 . . not vehicle-mounted {(special adaptations of automatic tractor steering [A01B 69/04](#); devices for lifting, movable on wheels, automatically guided [B66F 9/063](#))}

- B62D 1/26 . . . mechanical, e.g. by a non-load-bearing guide ([railways B61](#))
- B62D 1/265 . . . {especially adapted for guiding road vehicles carrying loads or passengers, e.g. in urban networks for public transportation}
- B62D 1/28 . . . non-mechanical {e.g. following a line or other known markers ([steering position indicators B62D 15/02](#); [steering aids B62D 15/025](#); [parking aids B62D 15/027](#); [steering assistants B62D 15/029](#); [determination or calculation of trajectory of land vehicles G05D 1/021](#))}
- B62D 1/283 . . . {for unmanned vehicles}
- B62D 1/286 . . . {Systems for interrupting non-mechanical steering due to driver intervention}

B62D 3/00 **Steering gears** ([power assisted or power driven B62D 5/00](#); [steering linkages B62D 7/00](#); for non-deflectable wheels [B62D 11/00](#); [gearing in general F16H](#))

- B62D 3/02 . . . mechanical
- B62D 3/04 . . . of worm type
- B62D 3/06 . . . with screw and nut
- B62D 3/08 using intermediate balls or the like
- B62D 3/10 . . . with worm engaging in sector or roller gear
- B62D 3/12 . . . of rack-and-pinion type
- B62D 3/123 . . . {characterised by pressure yokes}
- B62D 3/126 . . . {characterised by the rack}
- B62D 3/14 . . . hydraulic

B62D 5/00 **Power-assisted or power-driven steering** ({[controlling steering depending on driving conditions sensed and responded to B62D 6/00](#)}; for non-deflectable wheels [B62D 11/00](#); [fluid pressure servomotors in general F15B](#))

- B62D 5/001 . . . {[Mechanical aspects of steer-by-wire systems, not otherwise provided in B62D 5](#)([hydraulic steer-by-wire systems B62D 5/091](#))}
- B62D 5/003 . . . {[Backup systems, e.g. for manual steering \(B62D 5/30 takes precedence\)](#)}
- B62D 5/005 . . . {[means for generating torque on steering wheel, e.g. feedback](#)}
- B62D 5/006 . . . {[power actuated \(control thereof B62D 6/008\)](#)}
- B62D 5/008 . . . {[Changing the transfer ratio between the steering wheel and the steering gear by variable supply of energy, e.g. by using a superposition gear](#)}
- B62D 5/02 . . . mechanical, e.g. using a power-take-off mechanism for taking power from a rotating shaft of the vehicle and applying it to the steering gear
- B62D 5/04 . . . electrical, e.g. using an electric servo-motor connected to, or forming part of, the steering gear
- B62D 5/0403 . . . {[characterised by constructional features, e.g. common housing for motor and gear box](#)}
- B62D 5/0406 . . . {[including housing for electronic control unit](#)}
- B62D 5/0409 . . . {[Electric motor acting on the steering column](#)}
- B62D 5/0412 . . . {[the axes of motor and steering column being parallel](#)}

- B62D 5/0415 {the axes being coaxial}
- B62D 5/0418 . . {Electric motor acting on road wheel carriers}
- B62D 5/0421 . . {Electric motor acting on or near steering gear}
- B62D 5/0424 . . . {the axes of motor and final driven element of steering gear, e.g. rack, being parallel}
- B62D 5/0427 {the axes being coaxial}
- B62D 5/043 . . {characterised by clutch means between driving element, e.g. motor, and driven element, e.g. steering column or steering gear}
- B62D 5/0433 . . . {the clutch being of on-off type}
- B62D 5/0436 {the clutch being a controlled emergency clutch, e.g. for disconnecting at motor break-down}
- B62D 5/0439 . . . {Controllable friction clutches ([B62D 5/0436](#) takes precedence)}
- B62D 5/0442 . . {Conversion of rotational into longitudinal movement}
- B62D 5/0445 . . . {Screw drives ([Screw mechanisms in general F16H 25/20](#))}
- B62D 5/0448 {Ball nuts}
- B62D 5/0451 . . . {Roller spindle drives}
- B62D 5/0454 . . . {Worm gears}
- B62D 5/0457 . . {characterised by control features of the drive means as such ([controlling steering depending on driving conditions sensed and responded to B62D 6/00](#); [determination of steering angle B62D 15/021](#); [measuring torque applied to steering wheels G01L 5/221](#); [control of electric motor as such H02P](#))}
- B62D 5/046 . . . {Controlling the motor}
- B62D 5/0463 {for generating assisting torque}
- B62D 5/0466 {for returning the steering wheel to neutral position}
- B62D 5/0469 {End-of-stroke control}
- B62D 5/0472 {for damping vibrations}
- B62D 5/0475 . . . {Controlling other elements}
- B62D 5/0478 {Clutches}
- B62D 5/0481 . . . {monitoring the steering system, e.g. failures}
- B62D 5/0484 {for reaction to failures, e.g. limp home}
- B62D 5/0487 {detecting motor faults ([B62D 5/0496](#) takes precedence)}
- B62D 5/049 {detecting sensor failures}
- B62D 5/0493 {detecting processor errors, e.g. plausibility of steering direction}
- B62D 5/0496 {by using a temperature sensor}
- B62D 5/06 . . fluid, i.e. using a pressurised fluid for most or all the force required for steering a vehicle
- B62D 5/061 . . {provided with effort, steering lock, or end-of-stroke limiters}
- B62D 5/062 . . {Details, component parts}
- B62D 5/063 . . . {Pump driven by vehicle engine ([B62D 5/065](#) takes precedence)}
- B62D 5/064 . . . {Pump driven independently from vehicle engine, e.g. electric driven pump ([B62D 5/065](#) takes precedence)}
- B62D 5/065 . . characterised by specially adapted means for varying pressurised fluid supply based on need, e.g. on-demand, variable assist
- B62D 5/07 . . Supply of pressurised fluid for steering also supplying other consumers; {control

- thereof}
- B62D 5/075 ... {using priority valves (priority valves in general [F15B 13/022](#))}
 - B62D 5/08 .. characterised by type of {steering} valve used (valves in general [F16K](#))
 - B62D 5/081 ... {Seat valves}
 - B62D 5/083 ... Rotary valves
 - B62D 5/0832 {with elastic means other than a torsion bar, e.g. leaf springs}
 - B62D 5/0835 {characterised by means for actively limiting the deflection angle, e.g. depending on driving parameters (controlling steering depending on driving conditions sensed and responded to [B62D 6/00](#))}
 - B62D 5/0837 {characterised by the shape of the control edges, e.g. to reduce noise}
 - B62D 5/087 ... Sliding spool valves
 - B62D 5/09 .. characterised by means for actuating valves
 - B62D 5/091 ... {Hydraulic steer-by-wire systems, e.g. the valve being actuated by an electric motor}
 - B62D 5/092 {the electric motor being connected to the final driven element of the steering gear, e.g. rack}
 - B62D 5/093 ... Telemotor driven by steering wheel movement (hydraulic steering gear [B62D 3/14](#))
 - B62D 5/097 Gerotor type
 - B62D 5/10 .. characterised by type of power unit
 - B62D 5/12 ... Piston and cylinder
 - B62D 5/14 ... Rotary motor
 - B62D 5/16 ... Expansible chamber with flexible wall
 - B62D 5/18 .. characterised by power transmitting means
 - B62D 5/20 .. specially adapted for particular type of steering gear or particular application (steering gears per se [B62D 3/00](#); steering linkages not characterised by being power-assisted or power-driven [B62D 7/00](#))
 - B62D 5/22 ... for rack-and-pinion type {(pressure yokes [B62D 3/123](#))}
 - B62D 5/24 ... for worm type
 - B62D 5/26 ... for pivoted axles
 - B62D 5/28 ... for pivoted bogies
 - B62D 5/30 .. Safety devices, e.g. alternate emergency power supply or transmission means to ensure steering upon failure of the primary steering means
 - B62D 5/32 ... for telemotor systems

B62D 6/00 Arrangements for automatically controlling steering depending on driving conditions sensed and responded to, e.g. control circuits (means for initiating a change in direction [B62D 1/00](#); steering valves [B62D 5/06](#); combined with means for inclining the vehicle body or wheels on bends [B62D 9/00](#))

NOTE

[B62D 1/00](#) to [B62D 5/00](#) or [B62D 7/00](#) to [B62D 19/00](#) if other aspects of the steering system are of interest

- B62D 6/001 . {the torque NOT being among the input parameters}

- B62D 6/002 . {computing target steering angles for front or rear wheels ([B62D 7/159](#) takes precedence)}
- B62D 6/003 .. {in order to control vehicle yaw movement, i.e. around a vertical axis ([B62D 6/007](#) take precedence; stability systems acting on the brakes **B60T 8/00B10H**)}
- B62D 6/005 ... {treating sensor outputs to obtain the actual yaw rate}
- B62D 6/006 .. {using a measured or estimated road friction coefficient}
- B62D 6/007 . {adjustable by the driver, e.g. sport mode}
- B62D 6/008 . {Control of feed-back to the steering input member, e.g. simulating road feel in steer-by-wire applications}
- B62D 6/02 . responsive only to vehicle speed
- B62D 6/04 . responsive only to forces disturbing the intended course of the vehicle, e.g. forces acting transversely to the direction of vehicle travel
- B62D 6/06 . responsive only to vehicle vibration dampening arrangements ([steering dampers for cycles B62K 21/08](#))
- B62D 6/08 . responsive only to { driver} input torque

WARNING

Group [B62D 6/08](#) is not complete. See also [B62D 5/04](#)

- B62D 6/10 .. characterised by means for sensing { or determining} torque

WARNING

Group [B62D 6/10](#) is not complete. See also [G01L 5/22](#)

B62D 7/00 **Steering linkage; Stub axles or their mountings** ([B62D 13/00](#) takes precedence; power-assisted or power-driven steering [B62D 5/00](#))

- B62D 7/02 . for pivoted bogies
- B62D 7/023 .. {Steering turntables}
- B62D 7/026 .. {characterised by comprising more than one bogie, e.g. situated in more than one plane transversal to the longitudinal centre line of the vehicle}
- B62D 7/04 .. with more than one wheel
- B62D 7/06 . for individually-pivoted wheels, e.g. on king-pins
- B62D 7/08 .. the pivotal axes being situated in a single plane transverse to the longitudinal centre line of the vehicle
- B62D 7/09 ... characterised by means varying the ratio between the steering angles of the steered wheels ([varying the ratio automatically depending on driving conditions B62D 6/00](#))
- B62D 7/10 ... with single-output steering gear
- B62D 7/12 ... with twin-output steering gear

- B62D 7/14 . . the pivotal axes being situated in more than one plane transverse to the longitudinal centre line of the vehicle, e.g. all-wheel steering
- B62D 7/142 . . . {specially adapted for particular vehicles, e.g. tractors, carts, earth-moving vehicles, trucks}
- B62D 7/144 {for vehicles with more than two axles}
- B62D 7/146 . . . {characterised by comprising means for steering by acting on the suspension system, e.g. on the mountings of the suspension arms (means on vehicle for adjusting camber, castor or toe-in [B62D 17/00](#))}
- B62D 7/148 . . . {provided with safety devices}
- B62D 7/15 . . . characterised by means varying the ratio between the steering angles of the steered wheels {[B62D 7/148](#) takes precedence}
- B62D 7/1509 {with different steering modes, e.g. crab-steering, or steering specially adapted for reversing of the vehicle}
- B62D 7/1518 {comprising a mechanical interconnecting system between the steering control means of the different axles}
- B62D 7/1527 {comprising only mechanical parts, i.e. without assistance means}
- B62D 7/1536 {provided with hydraulic assistance; (power-assisted fluid steering per se [B62D 5/06](#))}
- B62D 7/1545 {provided with electrical assistance; (power-assisted electrical steering per se [B62D 5/04](#))}
- B62D 7/1554 {comprising a fluid interconnecting system between the steering control means of the different axles; (power-assisted fluid steering per se [B62D 5/06](#))}
- B62D 7/1563 {provided with fluid control means; ([B62D 7/1572](#) takes precedence)}
- B62D 7/1572 {provided with electro-hydraulic control means}
- B62D 7/1581 {characterised by comprising an electrical interconnecting system between the steering control means of the different axles; (power-assisted electrical steering per se [B62D 5/04](#))}
- B62D 7/159 {characterised by computing methods or stabilisation processes or systems, e.g. responding to yaw rate, lateral wind, load, road condition}

- B62D 7/16 . . Arrangement of linkage connections (pivots per se [F16C](#); {e.g. ball joints [F16C 11/06](#)})
- B62D 7/163 . . {substantially in axial direction, e.g. between rack bar and tie-rod}
- B62D 7/166 . . {substantially perpendicular, e.g. between tie-rod and steering knuckle (steering knuckles in general [B62D 7/18](#))}

- B62D 7/18 . . Steering knuckles; King pins

- B62D 7/20 . . Links, e.g. track rods (means for adjusting camber, castor, or toe-in [B62D 17/00](#))

- B62D 7/22 . . Arrangements for reducing or eliminating reaction, e.g. vibration, from parts, e.g. wheels, of the steering system {(dampers in general [F16F](#))}
- B62D 7/222 . . {acting on the steering wheel}
- B62D 7/224 . . {acting between the steering wheel and the steering gear, e.g. on the steering column}
- B62D 7/226 . . {acting on the steering gear}
- B62D 7/228 . . {acting between the steering gear and the road wheels, e.g. on tie-rod}

B62D 9/00 **Steering deflectable wheels not otherwise provided for** ([steering position indicators B62D 15/02](#))

- B62D 9/002 . {combined with means for differentially distributing power on the deflectable wheels during cornering}
- B62D 9/005 . {Emergency systems using brakes for steering}
- B62D 9/007 . {Emergency systems using the steering system for braking}
- B62D 9/02 . combined with means for inwardly inclining vehicle body on bends
- B62D 9/04 . combined with means for { inwardly} inclining wheels on bends ([B62D 9/02 takes precedence](#))

WARNING

Group [B62D 9/04](#) is not complete. See also [B62D 9/02](#)

B62D 11/00 **Steering non-deflectable wheels; Steering endless tracks or the like**

NOTE

Gearings of interest apart from this application are also classified in the relevant group of subclass [F16H](#) covering gearings per se

- B62D 11/001 . {control systems ([B62D 11/183 takes precedence](#))}

NOTE

When classifying in this group, classification is also made in the appropriate one of groups [B62D 11/02](#) to [B62D 11/24](#) if other aspects of the steering system are of interest

- B62D 11/003 .. {Electric or electronic control systems}
- B62D 11/005 .. {Hydraulic control systems}
- B62D 11/006 .. {Mechanical control systems}
- B62D 11/008 .. {Pneumatic control systems}
- B62D 11/02 . by differentially driving ground-engaging elements on opposite vehicle sides
- B62D 11/04 .. by means of separate power sources
- B62D 11/06 .. by means of a single main power source
- B62D 11/08 ... using brakes or clutches as main steering-effecting means
- B62D 11/10 ... using gearings with differential power outputs on opposite sides, e.g. with twin-differential or epicyclic gears **{arrangements or mounting of transmissions in vehicles [B60K 17/00](#); gearing in general [F16H](#)}**
- B62D 11/105 **{using variable ratio belt and pulley gearings (gearing for conveying rotary motion by endless flexible members [F16H 7/00](#), [F16H 9/00](#))}**

- B62D 11/12 using separate change-speed gearings
- B62D 11/14 differential power outputs being effected by additional power supply to one side, e.g. power originating from secondary power source
- B62D 11/16 the additional power supply being supplied mechanically
- B62D 11/18 the additional power supply being supplied hydraulically
- B62D 11/183 {Control systems therefor}
- B62D 11/186 {Uncoupling devices for the hydraulic motors, e.g. to allow towing}
- B62D 11/20 Endless-track steering having pivoted bogie carrying track ([B62D 11/02](#) takes precedence)
- B62D 11/22 Endless track steering being effected by deflecting endless track rollers or the like
- B62D 11/24 Endless track steering specially adapted for vehicles having both steerable wheels and endless track
- B62D 12/00** **Steering specially adapted for vehicles operating in tandem or having pivotally connected frames** ([steering endless tracks or the like B62D 11/00](#); [steering specially adapted for trailers B62D 13/00](#))
- B62D 12/02 for vehicles operating in tandem
- B62D 13/00** **Steering specially adapted for trailers** ([combined traction and steering hitches B60D](#))
- B62D 13/005 {operated from tractor steering system}
- B62D 13/02 for centrally-pivoted axles
- B62D 13/025 {the pivoted movement being initiated by the coupling means between tractor and trailer}
- B62D 13/04 for individually-pivoted wheels
- B62D 13/06 for backing a normally drawn trailer
- B62D 15/00** **Steering not otherwise provided for**
- B62D 15/02 Steering position indicators; {Steering position determination; Steering aids}
- B62D 15/0205 {Mechanical indicators, e.g. in or near steering wheel}
- B62D 15/021 {Determination of steering angle (**sensors in general G01B**)}
- B62D 15/0215 {by measuring on the steering column}
- B62D 15/022 {on or near the connection between the steering wheel and steering column}
- B62D 15/0225 {by measuring on a steering gear element, e.g. on a rack bar}
- B62D 15/023 {by measuring on the king pin}
- B62D 15/0235 {by measuring or deriving directly at the electric power steering motor}
- B62D 15/024 {Other means for determination of steering angle without directly measuring it, e.g. deriving from wheel speeds on different sides of the car}
- B62D 15/0245 {Means or methods for determination of the central position of the steering}

- system, e.g. straight ahead position}
- B62D 15/025 . . {Active steering aids, e.g. helping the driver by actively influencing the steering system after environment evaluation ([B62D 1/28](#) takes precedence; parking aids [B62D 15/027](#))}
- B62D 15/0255 . . . {Automatic changing of lane, e.g. for passing another vehicle}
- B62D 15/026 . . . {combined with automatic distance control, i.e. electronic tow bar}
- B62D 15/0265 . . . {Automatic obstacle avoidance by steering}
- B62D 15/027 . . {Parking aids, e.g. instruction means}
- B62D 15/0275 . . . {by overlaying a vehicle path based on present steering angle over an image without processing that image}
- B62D 15/028 . . . {Guided parking by providing commands to the driver, e.g. acoustically or optically}
- B62D 15/0285 . . . {Parking performed automatically}
- B62D 15/029 . . {Steering assistants using warnings or proposing actions to the driver without influencing the steering system (parking aids [B62D 15/027](#), determination or calculation of trajectory of land vehicles [G05D 1/021](#), image processing [G06T](#))}
- B62D 15/0295 . . . {by overlaying a vehicle path based on present steering angle over an image without processing that image}

B62D 17/00 Means on vehicles for adjusting camber, castor, or toe-in

B62D 19/00 Radius rods, i.e. distance members

Understructures; Superstructures; Vehicle bodies

B62D 21/00 Understructures, i.e. chassis frame on which a vehicle body may be mounted (combined frame and vehicle body [B62D 23/00](#); {characterised by the material thereof [B62D 29/00](#)})

- B62D 21/02 . comprising longitudinally or transversely arranged frame members
- B62D 21/03 . . transverse members providing body support
- B62D 21/04 . . single longitudinal type
- B62D 21/05 . . pinched frame type, i.e. formed of at least two longitudinal frame sections connected by other longitudinal frame sections of lesser transverse dimension
- B62D 21/06 . of X-shaped or fork-shaped construction, i.e. having members which form an X or fork as the frame is seen in plan view
- B62D 21/07 . wide-hipped frame type, i.e. a wide box-shaped mid portion with narrower sections extending from said mid portion in both fore and aft directions
- B62D 21/08 . built up with interlaced cross members
- B62D 21/09 . Means for mounting load bearing surfaces
- B62D 21/10 . in which the main member is plate-like

- B62D 21/11 . with resilient means for suspension {, e.g. of wheels or engine; sub-frames for mounting engine or suspensions}
- NOTE**
- This group does not cover subject matter primarily relating to the suspension, with only a nominal recitation of frame structure, which are covered by subclass [B60G](#)
- B62D 21/12 . assembled from readily detachable parts
- B62D 21/14 . of adjustable length or width
- B62D 21/15 . having impact absorbing means, e.g. a frame designed to permanently or temporarily change shape or dimension upon impact with another body ([bumpers B60R 19/02](#); [shock absorbers in general F16F](#))
- B62D 21/152 .. {Front or rear frames}
- B62D 21/155 ... {Sub-frames or underguards}
- B62D 21/157 .. {for side impacts}
- B62D 21/16 . having fluid storage compartment
- B62D 21/17 . forming fluid or electrical conduit means or having other means to accommodate the transmission of a force or signal
- B62D 21/18 . characterised by the vehicle type and not provided for in groups [B62D 21/02](#) to [B62D 21/17](#)
- B62D 21/183 .. {specially adapted for sports vehicles, e.g. race, dune buggies, go-karts ([tubular skeleton B62D 23/005](#))}
- B62D 21/186 .. {for building site vehicles or multi-purpose tractors ([tracked vehicles B62D 55/10](#); [tractors in general B62D 49/00](#); [building site vehicles in general E02F](#); [lift-trucks B66F](#))}
- B62D 21/20 .. trailer type, i.e. a frame specifically constructed for use in a non-powered vehicle
- B62D 23/00** **Combined superstructure and frame, i.e. monocoque constructions** ({ having impact absorbing means [B62D 21/15](#);} superstructure { or monocoque structure} sub-units { or parts or details thereof}[B62D 25/00](#); { characterised by the material thereof [B62D 29/00](#)})
- B62D 23/005 . {with integrated chassis in the whole shell e.g. meshwork, tubes, or the like ([B62D 33/044](#) takes precedence)}
- B62D 24/00** **Connections between vehicle body and vehicle frame** ([B62D 23/00](#), [B62D 33/077](#) take precedence)
- WARNING**
- Group [B62D 24/00](#) and subgroups are not complete. See also other groups of [B62D](#)
- B62D 24/02 . Vehicle body, not intended to move relatively to the vehicle frame, and mounted on

- vibration absorbing mountings, e.g. rubber pads
- B62D 24/04
 - Vehicle body mounted on resilient suspension for movement relative to the vehicle frame
- B62D 25/00**
 - Superstructure {or monocoque structure} sub-units; Parts or details thereof not otherwise provided for {(having impact absorbing means [B62D 21/15](#); running-boards, steps, or the like as superstructure sub-unit [B60R 3/00](#))}**
- B62D 25/02
 - Side panels {([B62D 33/046](#) takes precedence; sideboards for open load compartments [B62D 33/023](#))}
- B62D 25/025
 - .. {Side sills thereof}
- B62D 25/04
 - Door pillars; {windshield pillars}
- B62D 25/06
 - Fixed roofs (non-fixed roofs or like shelters [B60J 7/00](#); roof liners [B60R 13/02](#); insulating elements [B60R 13/08](#))
- B62D 25/07
 - .. having water drainage or guide means integral with roof structure
- B62D 25/08
 - Front or rear portions {(sub-frames for mounting engine or suspensions [B62D 21/11](#))}
- B62D 25/081
 - .. {Cowls (ventilating openings situated directly in front of the vehicle front window [B60H 1/28](#))}
- B62D 25/082
 - .. {Engine compartments}
- B62D 25/084
 - ... {Radiator supports}
- B62D 25/085
 - ... {Front-end modules}
- B62D 25/087
 - .. {Luggage compartments}
- B62D 25/088
 - .. {Details of structures as upper supports for springs or dampers}
- B62D 25/10
 - .. Bonnets or lids, {e.g. for trucks, tractors, busses, work vehicles (for truck beds [B60J 7/1607](#); for boats [B63B 19/12](#); doors arranged at the vehicle rear [B60J 5/10](#); inlet covers for vehicle fuel tanks [B60K 15/05](#); for protecting non-occupants of a vehicle [B60R 21/38](#))}
- B62D 25/105
 - ... {for motor cars}
- B62D 25/12
 - ... Parts or details thereof (locks [E05B](#), {[E05B 65/19](#); devices for holding open [E05C 17/00](#), e.g. while carrying oversize objects [E05C 17/042](#); hinges [E05D](#); counterbalancing means [E05F](#); {checks, stops, buffers [E05F 5/00](#)}; springs, {e.g. pneumatic springs} [F16F](#))
- B62D 25/14
 - .. Dashboards as superstructure sub-units (other dashboard aspects [B60K](#))
- B62D 25/142
 - ... {having ventilation channels incorporated therein}
- B62D 25/145
 - ... {having a crossbeam incorporated therein}
- B62D 25/147
 - {with adjustable connection to the A-pillars}
- B62D 25/16
 - .. Mud-guards or wings; Wheel cover panels (equipped with means for freeing wheels or tyres from foreign matter [B60S](#))
- B62D 25/161
 - ... {Mud-guards made of non-conventional material, e.g. rubber, plastics}
- B62D 25/163
 - ... {Mounting devices}
- B62D 25/165
 - {including sealing devices}
- B62D 25/166
 - {by rods or other distance-keeping devices}
- B62D 25/168
 - ... {Mud guards for utility vehicles}

- B62D 25/18 . . . Parts or details thereof, e.g. mudguard flaps
- B62D 25/182 {Movable mudguards, or mudguards comprising movable or detachable parts ([B62D 25/188](#) takes precedence)}
- B62D 25/184 {to facilitate access to wheels}
- B62D 25/186 {being attached or suspended laterally from the wheel ([B62D 25/184](#) takes precedence)}
- B62D 25/188 {Mud-guard flaps for utility vehicles}

- B62D 25/20 . Floors or bottom sub-units {(sub-frames for mounting engine or suspensions [B62D 21/11](#); drip trays [F16N 31/006](#))}
- B62D 25/2009 . . { in connection with other superstructure subunits}
- B62D 25/2018 . . . {the subunits being front structures}
- B62D 25/2027 . . . {the subunits being rear structures}
- B62D 25/2036 . . . {the subunits being side panels, sills or pillars ([B62D 21/157](#) takes precedence)}
- B62D 25/2045 . . . {the subunits being fire walls}
- B62D 25/2054 . . {Load carrying floors for commercial vehicles}
- B62D 25/2063 . . {Floor elements for repairs}
- B62D 25/2072 . . { Floor protection, e.g. from corrosion or scratching (floor mats [B60N 3/04](#), armour [F41H 7/042](#), insulation [B60R 13/08](#), streamlining [B62D 35/02](#)) [[M1104](#)]}
- B62D 25/2081 . . {Jack receiving devices}
- B62D 25/209 . . {Arrangements for the mounting of vehicle hitches (vehicle connections in general [B60D](#))}

- B62D 25/24 . Superstructure sub-units with access {or drainage} openings having movable or removable closures; {Sealing means therefor}(inlet covers for vehicle fuel tanks [B60K 15/05](#))

- B62D 27/00** **Connections between superstructure {or understructure} sub-units** {([B62D 33/0207](#), [B62D 33/044](#) take precedence; between sub-units predominantly made of synthetic material [B62D 29/048](#))}

- B62D 27/02 . rigid
- B62D 27/023 . . {Assembly of structural joints}
- B62D 27/026 . . {Connections by glue bonding (in general [F16B 11/00](#); processes [C09J 5/00](#))}

- B62D 27/04 . resilient

- B62D 27/06 . readily releasable
- B62D 27/065 . . {using screwthread (Connection of crossbeam to A- pillars [B62D 25/147](#); mounting load bearing surfaces [B62D 21/09](#); securing mudguards [B62D 25/163](#); connections for synthetic parts [B62D 29/048](#))}

- B62D 29/00** **Superstructures, { understructures, or sub-units thereof,} characterised by the material thereof** {([B62D 33/044](#), [B62D 33/048](#) take precedence)}

- B62D 29/001 . { characterised by combining metal and synthetic material}
- B62D 29/002 . . { a foamable synthetic material or metal being added in situ (shaping of substances in a plastic state by foaming, in general [B29C 44/00](#))}

- B62D 29/004 .. { the metal being over-moulded by the synthetic material, e.g. in a mould}
- B62D 29/005 .. { preformed metal and synthetic material elements being joined together, e.g. by adhesives}

- B62D 29/007 . { predominantly of special steel or specially treated steel, e.g. stainless steel or locally surface hardened steel}

- B62D 29/008 . {predominantly of light alloys, e.g. extruded}

- B62D 29/02 . predominantly of wood

- B62D 29/04 . predominantly of synthetic material (working of plastics or substances in a plastic state B29)

- B62D 29/041 .. {Understructures}
- B62D 29/043 .. { Superstructures ([B62D 25/161](#) takes precedence)}
- B62D 29/045 ... { Van bodies composed of substantially rectangular panels}
- B62D 29/046 .. {Combined superstructure and frame, i.e. monocoque constructions}
- B62D 29/048 .. { Connections therefor, e.g. joints ([B62D 29/045](#) takes precedence)}

- B62D 31/00** **Superstructure for passenger vehicles** (passenger vehicles specially adapted to co-operate with aircraft or terminal buildings [B64F 1/31](#))

- B62D 31/003 . {compact cars e.g. city cars}
- B62D 31/006 .. {foldable ([droppable B60F 5/006](#))}

- B62D 31/02 . for carrying large numbers of passengers, e.g. omnibus
- B62D 31/025 .. {having modular sections}

- B62D 31/04 . with more than one deck

- B62D 33/00** **Superstructures for load-carrying vehicles** ({ having impact absorbing means [B62D 21/15](#);} in which a load-carrying element is movable B60P; liners [B60R 13/00](#); { joining sheets or plates to one another or to strips or bars parallel to them [F16B 5/00](#)})

- B62D 33/02 . Platforms; Open load compartments {([Flat wagons including posts or standards B61D 3/08](#))}
- B62D 33/0207 .. {Connections of movable or detachable racks or stanchions to platforms}
- B62D 33/0215 ... {for log hauling vehicles ([vehicles for log transport in general B60P 3/41](#))}
- B62D 33/0222 .. {Connecting elements between stanchions, e.g. roof supporting elements, stiffeners ([non-fixed roofs B60J 7/00](#); [securing and covering of load B60P 7/00](#))}
- B62D 33/023 .. Sideboard or tailgate structures {([vehicle side panels in general B62D 25/02](#))}
- B62D 33/027 ... movable
- B62D 33/0273 {Movable tailboards for vehicles comprising non-movable sideboards, e.g. pick-up trucks ([B62D 33/037](#) takes precedence)}
- B62D 33/0276 {by vertical translation ([B62D 33/0273](#) takes precedence)}
- B62D 33/03 by swinging down {([B62D 33/0273](#) takes precedence)}
- B62D 33/033 removable {([B62D 33/0273](#) takes precedence)}

- B62D 33/037 Latching means therefor
- B62D 33/04 . Enclosed load compartments {Frameworks for movable panels, tarpaulins or side curtains (tarpaulins per se [B60J 7/00](#), [B60P 7/04](#); side curtains per se [B60J 5/065](#))}
- B62D 33/042 . . {divided into compartments (movable bulk heads [B60P 7/14](#); cattle transport [B60P 3/04](#); bottled liquids [B60P 3/02](#))}
- B62D 33/044 . . {built up with profiles of constant elongated shape, e.g. extruded, mechanically interconnected by coupling members, e.g. by clamping, riveting or bolting}
- B62D 33/046 . . {built up with flat self-supporting panels; Fixed connections between panels ([B62D 29/045](#), [B62D 33/048](#) take precedence)}
- B62D 33/048 . . {for refrigerated goods vehicles}
- B62D 33/06 . Drivers` cabs {(overhead guards, e.g. against loads falling down [B60R 21/11](#); roll-over protection [B60R 21/13](#))}
- B62D 33/0604 . . {Cabs insulated against vibrations or noise, e.g. with elastic suspension (resilient connections between superstructure sub-units [B62D 27/04](#); damping noise in general [G10K 11/00](#); for vehicles in general [B60R 13/08](#))}
- B62D 33/0608 {pneumatic or hydraulic suspension}
- B62D 33/0612 . . {Cabins with living accommodation, especially for long distance road vehicles, i.e. sleeping, cooking, or other facilities (beds in general adapted to be used in vehicles [A47C 17/80](#); sanitation devices in vehicles in general [B60R 15/20](#); living accommodation in vehicles in general [B60P 3/32](#); passenger fittings in general [B60N 3/00](#))}
- B62D 33/0617 . . {for tractors or off-the-road vehicles (protective devices for drivers in case of overturning of tractors [B60R 21/131](#))}
- B62D 33/0621 {able to be dismantled, folding}
- B62D 33/0625 {open}
- B62D 33/063 . . movable from one position into at least one other position, e.g. tiltable, pivotable about a vertical axis, displaceable from one side of the vehicle to the other
- B62D 33/0633 {pivotable about a vertical axis}
- B62D 33/0636 {displaceable along a linear path}
- B62D 33/067 tiltable
- B62D 33/07 characterised by the device for locking the cab in the tilted or in the driving position
- B62D 33/071 {Locking devices for cabins in driving position; Shock and vibration absorbing devices therefor}
- B62D 33/073 . . . characterised by special adaptations of vehicle control devices
- B62D 33/077 . characterised by the connection of the superstructure to the vehicle frame {([B62D 33/06](#) takes precedence)}
- B62D 33/08 . comprising adjustable means ([B62D 33/10](#) takes precedence)
- B62D 33/10 . . comprising means for the suspension of the superstructure on the frame
- B62D 35/00** **Vehicle bodies characterised by streamlining**
- B62D 35/001 . {For commercial vehicles or tractor-trailer combinations e.g. caravans}
- B62D 35/002 . . {for caravans ([B62D 35/004](#) takes precedence)}

- B62D 35/004 . . {Inflatable nose or rear cones}
- B62D 35/005 . {Front spoilers ([B62D 35/001](#) takes precedence)}
- B62D 35/007 . {Rear spoilers ([B62D 35/001](#) takes precedence)}
- B62D 35/008 . {Side spoilers ([B62D 35/001](#) takes precedence)}
- B62D 35/02 . Streamlining the undersurfaces {([B62D 35/005](#), [B62D 35/007](#), [B62D 35/008](#) take precedence)}

B62D 37/00 **Stabilising vehicle bodies without controlling suspension arrangements**

- B62D 37/02 . by aerodynamic means
- B62D 37/04 . by means of movable masses
- B62D 37/06 . . using gyroscopes

B62D 39/00 **Vehicle bodies not otherwise provided for {e.g. safety vehicles (safety equipment [B60R 21/00](#))}**

B62D 41/00 **Fittings for identifying vehicles in case of collision; Fittings for marking or recording collision areas**

B62D 43/00 **Spare wheel stowing, holding, or mounting arrangements**

- B62D 43/002 . {Handling devices, mainly for heavy wheels (via cables and chains [B62D 43/045](#))}
- B62D 43/005 . {Protective coverings for spare wheels}
- B62D 43/007 . {Anti-theft devices for spare wheels}
- B62D 43/02 . external to the vehicle body
- B62D 43/04 . . attached beneath the vehicle body
- B62D 43/045 . . . {the wheel or its cradle being attached to one or more chains or cables for handling}
- B62D 43/06 . within the vehicle body
- B62D 43/08 . . and arranged substantially vertically
- B62D 43/10 . . and arranged substantially horizontally

Motor vehicles or trailers classified according to type; Parts or accessories thereof (frames for vehicles of special type [B62D 21/18](#))

B62D 47/00 **Motor vehicles or trailers predominantly for carrying passengers (superstructures [B62D 31/00](#))**

- B62D 47/003 . {convertible in order to modify the number of seats (foldable compact cars [B62D 31/006](#); convertible from one use to a different one [B60P 3/42](#))}
- B62D 47/006 . {Vehicles which can be divided in sub-vehicles; nestable vehicles}
- B62D 47/02 . for large numbers of passengers, e.g. omnibus
- B62D 47/025 .. {articulated buses with interconnecting passageway, e.g. bellows (coupling aspects [B60D 5/00](#))}
- B62D 49/00** **Tractors** (of walk type [B62D 51/04](#); endless- track features [B62D 55/00](#)){tractors for handling aircraft [B64F 1/22](#); transport specially adapted for underground galleries [E21F 13/02](#)}
- B62D 49/002 . {characterised by being of the low ground pressure type}
- B62D 49/005 . {Tractors for semi-trailers (combinations of tractor plus semi- trailer [B62D 53/06](#))}
- B62D 49/007 .. {Tractors for handling trailers, e.g. roll-trailers in terminals}
- B62D 49/02 . modified to take lifting devices
- B62D 49/04 . modified to take pushing devices
- B62D 49/06 . adapted for multi-purpose use
- B62D 49/0607 .. {Straddle tractors, used for instance above vine stocks, rows of bushes, or the like}
- B62D 49/0614 .. {equipped with visual aids for positioning implements or to control working condition (optical signalling for vehicles in general [B60Q 1/26](#))}
- B62D 49/0621 .. {comprising traction increasing arrangements e.g. all-wheel traction devices, multiple-axle traction arrangements, auxiliary traction increasing devices (anti-skid or anti-slip devices fitted onto the wheels [B60B 15/02](#), [B60B 39/12](#); arrangements of transmission for driving both front and rear wheels or tandem wheels of vehicles [B60K 17/34](#), [B60K 17/36](#))}
- B62D 49/0628 ... {using detachable weights (counterweights against overturning [B62D 49/085](#); movable stabilisation masses [B62D 37/04](#))}
- B62D 49/0635 ... {using additional ground engaging means, e.g. endless tracks (vehicles with endless tracks and either additional or alternative ground wheels [B62D 55/02](#), [B62D 55/04](#))}
- B62D 49/0642 ... {by coupling of tractors}
- B62D 49/065 .. {Coupling of multi-purpose tractors with equipment (towing bars [B60D](#); with load transfer [B62D 53/08](#); power take-off [B60K](#); with lifting devices [B62D 49/02](#); pushing gear [B62D 49/04](#))}
- B62D 49/0657 .. [N. Asymmetrical tractors]
- B62D 49/0664 .. {Light, simple, and economical tractors ([B62D 49/002](#) takes precedence)}
- B62D 49/0671 ... {the driver riding on the tractor}
- B62D 49/0678 .. [N. Tractors of variable track width or wheel base (for vehicles in general [B60B 23/12](#) and [B60B 35/10](#))]
- B62D 49/0685 .. [N. Reversible tractors adapted for shuttle work]
- B62D 49/0692 .. {characterised by the particular arrangement of control devices, e.g. having more than one control stand, operable from vehicle extension (control devices or systems characterised by mechanical features only)}

- B62D 49/08 . having means for preventing overturning or tipping (safety devices for propulsion-unit control, specially adapted for, or arranged in, vehicles [B60K 28/00](#))
- B62D 49/085 . . [N. Counterweight]
- B62D 51/00** **Motor vehicles characterised by the driver not being seated** {(wheeled carriers for golf bags [A63B 55/08](#))}
- B62D 51/001 . {characterised by the vehicle control device (mechanical features of control devices in general [G05G](#); arrangements of vehicle control devices in general [B60K 20/00](#), [B60K 23/00](#), [B60K 26/00](#))}
- B62D 51/002 . . {comprising safety arrangements (safety devices for vehicle propulsion unit control [B60K 28/00](#))}
- B62D 51/004 . {characterised by the transmission (arrangements or mounting of transmissions in vehicles [B60K 17/00](#); gearing in general [F16H](#))}
- B62D 51/005 . {Vehicular characteristics of load handling vehicles, e.g. pedestrian trucks (fork-lift trucks [B66F 9/06](#))}
- B62D 51/007 . {the vehicle being of the endless track type (endless track vehicles in general [B62D 55/00](#))}
- B62D 51/008 . {characterised by the vehicle being formed by articulated or separable units (road trains [B62D 53/00](#))}
- B62D 51/02 . the driver standing in the vehicle
- B62D 51/04 . the driver walking
- B62D 51/06 . . Uniaxle walk-type tractors
- B62D 51/065 . . . {the vehicle having only one wheel}
- B62D 53/00** **Tractor-trailer combinations; Road trains** (traction couplings other than fifth wheel coupling [B60D](#)){tracked vehicles comprising at least two articulated parts **B62D 55/06B2**}
- B62D 53/005 . {Combinations with at least three axles and comprising two or more articulated parts (articulated buses [B62D 47/025](#))}
- B62D 53/02 . comprising a uniaxle tractor unit and a uniaxle trailer unit {see [B60B 11/00](#) - [B60B 11/08](#)}
- B62D 53/021 . . {comprising a universal coupling joint}
- B62D 53/023 . . {with two or more coupling joints allowing staggering of the units from a central plane}
- B62D 53/025 . . {Comprising a transmission shaft passing through the coupling joints ([B62D 53/021](#) takes precedence; trailers with powered axles [B62D 59/00](#))}
- B62D 53/026 . . . {With all wheels powered}
- B62D 53/028 . . {Having only coupling joints other than directional (articulated frames [B62D 21/186](#) and [B62D 55/10](#))}
- B62D 53/04 . comprising a vehicle carrying an essential part of the other vehicle's load by having

- supporting means for the front or rear part of the other vehicle
- B62D 53/045 .. {with rigid linkage in the horizontal plane (luggage trailers [B62D 63/064](#) to [B62D 63/067](#))}
 - B62D 53/06 .. Semi-trailers
 - B62D 53/061 ... {of flat bed or low loader type or fitted with swan necks (detachable swan necks [B62D 53/065](#); swan neck-fifth wheel couplings [B62D 53/08](#))}
 - B62D 53/062 {having inclinable, lowerable platforms; Lift bed trailers; Straddle trailers (lifting coupling saddles [B62D 53/0821](#); crane vehicles [B60P 3/28](#))}
 - B62D 53/064 {inclining platforms by detachable bogies}
 - B62D 53/065 [N. inclining platforms by detachable or folding swan necks]
 - B62D 53/067 ... {Multi-purpose, convertible or extendable load surface semi-trailers (for container transport [B60P 1/6418](#); convertible road transport vehicles in general [B60P 3/42](#))}
 - B62D 53/068 ... {having devices to equalise or modify the load between the fifth wheel and the rear wheels (adjustable coupling saddles per se [B62D 53/0807](#); load transfer devices to permit coupling or uncoupling [B62D 53/0857](#); anti jack-knifing devices [B62D 53/0871](#))}
 - B62D 53/08 .. Fifth wheel traction couplings {Tractors for handling trailers in terminals [49/00B2](#)}
 - B62D 53/0807 ... {adjustable coupling saddles mounted on sub-frames; Mounting plates therefor}
 - B62D 53/0814 {with adjustment of the clearance between the tractor or the trailer (devices modifying the load in tractor-trailer combinations [B62D 53/068](#))}
 - B62D 53/0821 {Lifting saddles, i.e. to lift the trailer front (tilting body constructions [B60P](#))}
 - B62D 53/0828 {Removable or fold-away traction couplings for non-specialised tractor vehicles}
 - B62D 53/0835 {Coupling saddles able to rock in all directions, e.g. for use in rough terrain}
 - B62D 53/0842 ... {King pins}
 - B62D 53/085 {fitted with anti-coupling devices, pivotal or retractable king pins, e.g. to prevent theft (vehicle fittings for preventing theft in general [B60R 25/00](#))}
 - B62D 53/0857 ... {Auxiliary semi-trailer handling or loading equipment, e.g. ramps, rigs, coupling supports}
 - B62D 53/0864 {Dollies for fifth wheel coupling}
 - B62D 53/0871 ... {with stabilising means, e.g. to prevent jack-knifing, pitching, rolling, buck jumping (stabilising in general [B62D 37/00](#); tractors [B62D 49/08](#))}
 - B62D 53/0878 {the fifth wheel coupling incorporating braking or restraining means}
 - B62D 53/0885 ... {Comprising devices to limit or to compensate for wear or excessive play; Lubricating, shock absorbing, bearing devices, or the like}
 - B62D 53/0892 ... {comprising power transmission shafts (trailers with driven ground wheels [B62D 59/00](#))}
 - B62D 53/10 ... with means for preventing accidental uncoupling
 - B62D 53/12 ... engaging automatically
 - B62D 53/125 {with simultaneous coupling of the service lines}

 - B62D 55/00** **Endless track vehicles** (steering aspects [B62D 11/00](#); { characterised by the driver not being seated [B62D 51/007](#)})

 - B62D 55/02 . with tracks and additional ground wheels {for multi-purpose tractors [B62D 49/0635](#)}

- B62D 55/04 . with tracks and alternative ground wheels, e.g. changeable from endless track vehicle into wheeled vehicle and vice versa {for multi-purpose tractors [B62D 49/0635](#)}
- B62D 55/06 . with tracks without ground wheels
- B62D 55/062 .. {Tracked vehicles of great dimensions adapted for moving bulky loads or gear}
- B62D 55/065 .. Multi-track vehicles, i.e. more than two tracks {(soil-shifting machines [E02F](#); mining machines [E21C](#))}
- B62D 55/0655 ... {Articulated endless track vehicles (steering specially adapted for trailers [B62D 13/00](#); articulated buses [B62D 47/025](#); tractor-trailer combinations or road trains comprising a uni-axle unit and a uni-axle trailer [B62D 53/02](#))}
- B62D 55/07 .. Mono-track vehicles
- B62D 55/075 .. Tracked vehicles for ascending or descending stairs, {steep slopes or vertical surfaces}(magnetic or pneumatic ground-engaging parts [B62D 55/265](#); chairs or multi-track cycles specially adapted for invalids [A61G 5/00](#))
- B62D 55/08 . Endless track units; Parts thereof
- B62D 55/084 .. Endless-track units or carriages mounted separably, adjustably or extensibly on vehicles, e.g. portable track units ([B62D 55/07](#) takes precedence)
- B62D 55/0842 ... {Tracked vehicle with track carriages suspended on three points, e.g. by an equaliser bar}
- B62D 55/0845 ... {Protection devices}
- B62D 55/0847 ... {Track blocking devices mounted on the frame; Track guides}
- B62D 55/088 .. with means to exclude or remove foreign matter, e.g. sealing means, self-cleaning track links or sprockets, deflector plates or scrapers
- B62D 55/0882 ... {Track or sprocket cleaning devices mounted on the frame (wheel cleaning devices in general [B60S](#))}
- B62D 55/0885 ... {Self-cleaning sprockets}
- B62D 55/0887 ... {Track-articulation sealings against dust, water, mud or the like (sealing of bearings in general [F16C 33/72](#); chain bushings in general [F16G 15/00](#))}
- B62D 55/092 .. with lubrication means (lubricating in general [F16N](#))
- B62D 55/096 .. with noise reducing means
- B62D 55/0963 ... {Anti-noise driving sprockets}
- B62D 55/0966 ... {Low noise rollers, e.g. with antivibration means (elastic wheel rims in general [B60B 9/00](#))}
- B62D 55/10 .. Bogies; Frames (track-tensioning means [B62D 55/30](#))
- B62D 55/104 .. Suspension devices for wheels, rollers, bogies or frames (vehicle suspension in general [B60G](#))
- B62D 55/108 ... with mechanical springs, e.g. torsion bars
- B62D 55/1083 { Torsion-bar springs}
- B62D 55/1086 { Rubber springs}
- B62D 55/112 ... with fluid springs, e.g. hydraulic pneumatic
- B62D 55/1125 { Hydro-pneumatic or pneumatic, e.g. air-cushioned}
- B62D 55/116 ... Attitude or position control of chassis by action on suspension, e.g. to compensate for a slope
- B62D 55/12 .. Arrangement, location, or adaptation of driving sprockets
- B62D 55/125 ... Final drives

- B62D 55/13 readily interchangeable modular type
- B62D 55/135 . . . with dismountable driving crown
- B62D 55/14 . . Arrangement, location, or adaptation of rollers
- B62D 55/145 . . . {Rollers with replaceable wear rings or rims (driving sprockets with replaceable rims [B62D 55/12](#))}
- B62D 55/15 . . . Mounting devices, e.g. bushings, axles, bearings, sealings {(with lubrication means [B62D 55/092](#))}
- B62D 55/18 . . Tracks (self-cleaning track links [B62D 55/088](#))
- B62D 55/20 . . . of articulated type, e.g. chains {(with lubrication means [B62D 55/092](#))}
- B62D 55/202 {Wheel engaging parts; Wheel guides on links}
- B62D 55/205 Connections between track links
- B62D 55/21 Links connected by transverse pivot pins
- B62D 55/211 {Bitubular chain links assembled by pins and double connectors}
- B62D 55/213 {Master track links}
- B62D 55/215 {Resilient connections between links}
- B62D 55/22 Arrangements for preventing or modifying back-flexing
- B62D 55/24 . . . of continuously flexible type, e.g. rubber belts
- B62D 55/242 {The flexible band being semi-rigid for resisting back-flexing and contributing to spring the vehicle}
- B62D 55/244 {Moulded in one piece, with either smooth surfaces or surfaces having projections, e.g. incorporating reinforcing elements}
- B62D 55/247 Gas filled or inflatable flexible tracks (connection of valves to inflatable elastic bodies [B60C 29/00](#))
- B62D 55/253 having elements interconnected by one or more cables or like elements
- B62D 55/26 . . . Ground engaging parts or elements {tracks specially adapted for amphibious vehicles [B60F 3/0015](#)}
- B62D 55/265 having magnetic or pneumatic adhesion
- B62D 55/27 having different types of crampons for progression over varying ground
- B62D 55/275 with street plate, i.e. means to prevent tread from cutting into road surface
- B62D 55/28 detachable
- B62D 55/283 {and movable, e.g. around an axis or perpendicularly to the track}
- B62D 55/286 {For soft grounds, e.g. consisting of snow or swamp}
- B62D 55/30 . . . Track-tensioning means
- B62D 55/305 . . . {acting on pivotably mounted idlers}
- B62D 55/32 . . Assembly, disassembly, repair or servicing of endless-track systems

- B62D 57/00** **Vehicles characterised by having other propulsion or other ground- engaging means than wheels or endless track, alone or in addition to wheels or endless track (sledges [B62B](#); motor sledges [B62M](#))**
- B62D 57/02 . . with ground-engaging propulsion means, e.g. walking members
- B62D 57/021 . . {the ground engaging means being sequentially inflatable bags for peristaltic movement ([B62D 57/024](#) takes precedence)}
- B62D 57/022 . . {consisting of members having both rotational and walking movements}

- B62D 57/024 . . specially adapted for moving on inclined or vertical surfaces (endless-track vehicles for ascending or descending stairs [B62D 55/075](#); hand-carts with provision for travelling up or down stairs [B62B 5/02](#))
- B62D 57/028 . . having wheels and mechanical legs ([B62D 57/024](#) takes precedence; ground-engaging vehicle fittings for supporting, lifting or manoeuvring the vehicle, wholly or in part [B60S 9/00](#))
- B62D 57/032 . . with alternately or sequentially lifted supporting base and legs; with alternately or sequentially lifted feet or skid ([B62D 57/024](#) takes precedence)
- B62D 57/036 . . screw type, e.g. Archimedian screw {(amphibious vehicles comprising screw-type ground-engaging means [B60F 3/0023](#))}
- B62D 57/04 . . having other than ground-engaging propulsion means, e.g. having propellers (arrangement of jet-propulsion units [B60K](#))

B62D 59/00 Trailers with driven ground wheels or the like

- B62D 59/02 . . driven from external propulsion unit
- B62D 59/04 . . driven from propulsion unit on trailer

B62D 61/00 Motor vehicles or trailers, characterised by the arrangement or number of wheels, not otherwise provided for, e.g. four wheels in diamond pattern

- B62D 61/02 . . with two road wheels in tandem on the longitudinal centre line of the vehicle
- B62D 61/04 . . with two other wheels which are coaxial
- B62D 61/06 . . with only three wheels
- B62D 61/065 . . { with single rear wheel}
- B62D 61/08 . . with single front wheel
- B62D 61/10 . . with more than four wheels {(tractors of the low ground pressure type [B62D 49/002](#))}
- B62D 61/12 . . with variable number of ground engaging wheels, e.g. with some wheels arranged higher than others, or with retractable wheels (for manoeuvring purposes only [B60S](#))
- B62D 61/125 . . {the retractable wheel being a part of a set of tandem wheels (resilient suspension for a single set of tandem wheels [B60G 5/00](#))}

B62D 63/00 Motor vehicles or trailers not otherwise provided for

- B62D 63/02 . . Motor vehicles
- B62D 63/025 . . { Modular vehicles (superstructures for busses having modular sections [B62D 31/025](#))}
- B62D 63/04 . . Component parts or accessories
- B62D 63/06 . . Trailers (vehicles comprising living accommodation for people, e.g. caravans, camping or like vehicles [B60P 3/32](#))
- B62D 63/061 . . { Foldable, extensible or yielding trailers (foldable caravans [B60P 3/34](#); adjustable chassis frames [B62D 21/14](#))}

- B62D 63/062 .. { Trailers with one axle or two wheels (semi-trailers [B62D 53/06](#))}
- B62D 63/064 ... {light luggage or equipment trailers, e.g. for batteries, gas generators, gas bottles, stretchers (luggage carriers per se [B60R](#))}
- B62D 63/065 ... {forming an extension of the towing vehicle, i.e. with two point fixation}
- B62D 63/067 {single wheeled (rigid or semi-rigid coupling)}
- B62D 63/068 .. {with more than two axles or more than four wheels (vehicles with more than four wheels in general [B62D 61/10](#))}
- B62D 63/08 .. Component parts or accessories

- B62D 65/00** **Designing, manufacturing, e.g. assembling, facilitating disassembly, or structurally modifying motor vehicles or trailers, not otherwise provided for**

- B62D 65/005 . {Inspection and final control devices}

- B62D 65/02 . Joining sub-units or components to, or positioning sub-units or components with respect to, body shell or other sub-units or components
- B62D 65/022 .. { Transferring or handling sub-units or components, e.g. in work stations or between workstations and transportation systems}
- B62D 65/024 .. { Positioning of sub-units or components with respect to body shell or other sub-units or components}
- B62D 65/026 ... { by using a jig or the like; Positioning of the jig}
- B62D 65/028 ... { by determining relative positions by measurement}
- B62D 65/04 .. Joining preassembled modular units composed of sub-units performing diverse functions, e.g. engine and bonnet ([B62D 65/06](#) to [B62D 65/16](#) take precedence)
- B62D 65/06 .. the sub-units or components being doors, windows, openable roofs, lids, bonnets, or weather strips or seals therefor {(assembling sealing arrangements with vehicle parts, e.g. doors, windows [B60J 10/0088](#))}
- B62D 65/10 .. the sub-units or components being engines, clutches or transmissions
- B62D 65/12 .. the sub-units or components being suspensions, brakes or wheel units
- B62D 65/14 .. the sub-units or components being passenger compartment fittings, e.g. seats, linings, trim, instrument panels
- B62D 65/16 .. the sub-units or components being exterior fittings, e.g. bumpers, lights, wipers {, exhausts}
- B62D 65/18 .. Transportation, conveyor or haulage systems specially adapted for motor vehicle or trailer assembly lines {(conveyers and haulage in general [B65G](#))}

- B62D 67/00** **Systematic disassembly of vehicles for recovery of salvageable components, e.g. for recycling (for disposal of vehicles by destroying or transformation [B09B 3/00](#), [B09B 5/00](#); General arrangement of separating plants [B03B 9/00](#); Recovery of plastics [B29B 17/00](#))**