

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 69/008](#); 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 5/00](#) (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

When classifying in this group, classification is also made in the appropriate one of groups [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 8/1755](#))}
- 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 83/16](#); 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](#))}
- 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 3/22](#))}
- 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 15/00](#); 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 . . {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 . . {Tractors of variable track width or wheel base (for vehicles in general [B60B 23/12](#) and [B60B 35/10](#))}
- B62D 49/0685 . . {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 . . {Counterweight}

- B62D 51/00** **Motor vehicles characterised by the driver not being seated** {(wheeled carriers for golf bags [A63B 55/60](#))}
- 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 55/0655](#)})
- 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	. . . . . {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 B62D 49/007)}
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](#))}**