

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](#)

Guidance heading: **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

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

Guidance heading: 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 accomodate 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 15/00](#) ; 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

Guidance heading: **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 55/08](#)) }

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 55/0655](#) }

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 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](#) })**