SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B61 RAILWAYS

Note(s)

In this class, the following expression is used with the meaning indicated:

- "railway systems" covers:
  a. systems in which trains or individual passenger vehicles or load carriers run on, or are guided by, ground or elevated tracks defined by rails, ropes, cables, or other guiding elements for wheels, rollers, or sliding anti-friction devices (permanently attached to a continuous traction element B65G 17/00);
  b. systems in which carriers or impellers for persons or loads are attached to, e.g. suspended from, a guided traction rope or cable which determines their path of movement (chain conveyers, scraper conveyers B65G 17/00, B65G 19/00);
  c. power and free systems of either of the above types in which vehicles, load-carriers, or loads may be selectively coupled to, or uncoupled from, continuous traction members, e.g. cables, chains.

B61B RAILWAY SYSTEMS; EQUIPMENT THEREFOR NOT OTHERWISE PROVIDED FOR (lifts or hoists, elevators, escalators, moving walkways B66B) **[4]**

Note(s)

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

- "rope railways" covers railways using cables or chains as traction or suspension means;
- "ropes", "cables", or "chains" are equivalent unless specifically mentioned.

Subclass index

1/00 General arrangement of stations, platforms, or sidings; Railway networks; Rail-vehicle marshalling systems (shunting humps or shunting devices B61J; construction of platforms E01F 1/00; time-tables G09D)

1/02 • General arrangement of stations and platforms including protection devices for the passengers

Elevated railways

3/00 Elevated railway systems with suspended vehicles (with suspended flexible tracks B61B 7/00; saddle or like balanced type with monorail B61B 13/06; with propelling cables and for transporting materials B65G; tracks therefor E01B 25/00)

3/02 • with self-propelled vehicles

5/00 Elevated railway systems without suspended vehicles (with monorail B61B 13/04; tracks therefor E01B 25/00)

5/02 • with two or more rails

Rope railways; Power-and-free systems [2]

7/00 Rope railway systems with suspended flexible tracks

7/02 • with separate haulage cables

7/04 • with suspended tracks serving as haulage cables

7/06 • with self-propelled vehicles

9/00 Tramway or funicular systems with rigid track and cable traction (haulage clips B61B 12/12; shunting devices with cable traction B61J) **[2]**

10/00 Power-and-free systems (ski-lift, sleigh-lift or like trackless systems with guided towing cables only B61B 11/00) **[2]**

10/02 • with suspended vehicles **[2]**

10/04 • with vehicles rolling trackless on the ground **[2]**

11/00 Ski-lift, sleigh-lift or like trackless systems with guided towing cables only

12/00 Component parts, details, or accessories for rope railways or power-and-free systems not provided for in groups B61B 7/00-B61B 11/00 (railway brakes B61H; turntables B61J 1/06) **[2]**

12/02 • Suspension of the load; Guiding means, e.g. wheels; Attaching traction cables **[2]**
12/04 • Devices for damping vibrations **[2]**
12/06 • Safety devices or measures against cable fracture **[2]**
12/08 • Cable lubrication **[2]**
12/10 • Cable traction drives **[2]**
12/12 • Cable grippers; Haulage clips **[2]**

Other railway systems; Combinations of systems

13/00 Other railway systems

13/02 • Rack railways
13/04 • Monorail systems
13/06 • • Saddle or like balanced type
13/08 • Sliding or levitation systems (magnetic suspension or levitation for vehicles, per se B60L 13/04; vehicles with air cushions between rails and vehicles B60V 3/04) **[4]**
13/10 • Tunnel systems (pneumatic tube conveyers B65G)
13/12 • Systems with propulsion devices between or alongside the rails, e.g. pneumatic systems (cable traction B61B 9/00; car-shunting devices B61J)

15/00 Combinations of railway systems

B61C LOCOMOTIVES; MOTOR RAILCARS (vehicles in general B60; frames or bogies B61F; special railroad equipment for locomotives B61J, B61K)

Note(s)

This subclass covers:
- general design features or items of locomotives and motor railcars not otherwise provided for;
- non-electric features of electric locomotives.

Subclass index

Locomotives or motor railcars in general or characterised by the type of motive power plant used

1/00 Steam locomotives or railcars (characterised by power transmissions B61C 9/00; engines F01; boilers F22B)
1/02 • of articulated construction; with two or more engines (appliances of booster engines B61C 15/02)
1/04 • with steam accumulators (steam accumulators F01K)
1/06 • Streamlining (of coachwork B61D)
1/08 • Arrangement or disposition of combustion apparatus or accessories therefor
1/10 • Arrangement or disposition of steam generators
1/12 • Arrangement or disposition of condensers
1/14 • Arrangement or disposition of exhaust apparatus

3/00 Electric locomotives or railcars (characterised by power transmission B61C 9/00; electrical features B60L, H02)
3/02 • with electric accumulators

5/00 Locomotives or motor railcars with IC engines or gas turbines (characterised by power transmission B61C 9/00; engines F02)
5/02 • Arrangement or disposition of intakes and apparatus for supplying, circulating, or filtering air for combustion or engine-cooling purposes
5/04 • Arrangement or disposition of exhaust apparatus

7/00 Other locomotives or motor railcars characterised by the type of motive power plant used; Locomotives or motor railcars with two or more different kinds or types of motive power
7/02 • Locomotives or motor railcars with pneumatic accumulators
7/04 • Locomotives or motor railcars with two or more different kinds or types of engines, e.g. steam and IC engines

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8/00 Filling stations for steam- or pneumatic-accumulator locomotives or motor railcars

9/00 Locomotives or motor railcars characterised by the type of transmission system used; Transmission systems specially adapted for locomotives or motor railcars (machine elements F16)
9/02 • Transmission systems in or for locomotives or motor railcars with reciprocating-piston steam engines
9/04 • • consisting of cranked axles and coupling-rods
9/06 • • having toothed, chain, friction, or belt gearing

9/08 • Transmission systems in or for locomotives or motor railcars with IC reciprocating-piston engines
9/10 • • mechanical (combined with hydraulic gearing B61C 9/14)
9/12 • • • with change-speed gearing
9/14 • • hydraulic, including combinations with mechanical gearing
9/16 • • • using gearing of the hydrostatic type
9/18 • • • using gearing of the hydrokinetic type
9/20 • • • • with mechanical change-speed gearing
9/22 • • pneumatic
9/24 • • electric (B61C 9/38 takes precedence)
9/26 • • with transmission shafts at an angle to the driving axles
9/28 • Transmission systems in or for locomotives or motor railcars with rotary prime movers, e.g. turbines
9/30 • • mechanical (combined with hydraulic gearing B61C 9/34)
9/32 • • • with change-speed gearing
9/34 • • hydraulic, including combinations with mechanical gearing
9/36 • • electric (B61C 9/38 takes precedence)
9/38 • Transmission systems in or for locomotives or motor railcars with electric motor propulsion (electrical features B60L, H02)
9/40 • • with cranked axles and coupling-rods
9/42 • • hydraulic
9/44 • • with hollow transmission shaft concentric with wheel axis
9/46 • • with motors forming parts of wheels
9/48 • • with motors supported on vehicle frames and driving axles, e.g. axle or nose suspension
9/50 • • • in bogies
9/52 • • with transmission shafts at an angle to the driving axles

Locomotives or motor railcars characterised by the type of means applying the tractive effort, or by their application to special railway systems or purposes

11/00 Locomotives or motor railcars characterised by the type of means applying the tractive effort; Arrangement or disposition of running gear other than normal driving wheels (construction of wheels B60B)
11/02 • tractive effort applied to cables or chains
11/04 • tractive effort applied to racks
11/06 • tractive effort applied or supplied by aerodynamic force or fluid reaction, e.g. air-screws or jet or rocket propulsion

13/00 Locomotives or motor railcars characterised by their application to special systems or purposes (B61C 11/00 takes precedence; self-propelled scaffold cars, break-down cranes, inspection trolleys B61D 15/00; general design of track recording vehicles B61K 9/00)
13/02 • for towing or transporting ships or for like special purposes
13/04 • for elevated railways with rigid rails (B61C 13/08 takes precedence)
13/06 • for railways with suspended flexible tracks, e.g. rope railways
13/08 • for saddle or like balanced-type railways

Details or accessories not otherwise provided for

15/00 Maintaining or augmenting the starting or braking power by auxiliary devices and measures; Preventing wheel slippage; Controlling distribution of tractive effort between driving wheels (propelling locomotives or motor railcars by special means B61C 11/00; driving wheels with non-slipping devices B60B; brakes B61H; wetting or lubricating rails B61K)
15/02 • by auxiliary driving wheels; by temporary coupling or use of flywheels or booster engines
15/04 • by controlling wheel pressure, e.g. by movable weights or heavy parts or by magnetic devices (magnetic brakes B61H)
15/06 • • by displacing fuel, ballast, or the like
15/08 • Preventing wheel slippage (adjusting wheel-braking force to prevent wheel slippage B60T 8/00)
15/10 • • by depositing sand or like friction-increasing materials (for vehicles in general B60B; combined control of sanding apparatus and brakes B61H)
15/12 • • by reducing the driving power
15/14 • controlling distribution of tractive effort between driving wheels

17/00 Arrangement or disposition of parts; Details or accessories not otherwise provided for; Use of control gear and control systems [2]
17/02 • Bunkers; Tanks; Tenders (coachwork B61D); Water or fuel pick-up or scoop apparatus; Water or fuel supply fittings (trackside installations, e.g. bunkers, tanks, for filling locomotives with sand or water B61K 11/00)
17/04 • Arrangement or disposition of driving cabins, footplates, or engine rooms; Ventilation thereof (driving cabins or accessories B61D)
17/06 • Power storing devices
17/08 • Lubrication systems (in general F16N)
17/10 • Connecting-rods for driving wheels; Arrangements of their bearings (connecting-rods or bearings, in general F16C 7/00, F16C 9/04)
17/12 • Control gear; Arrangements for controlling locomotives from remote points in the train or when operating in multiple units (control from points outside the train B61L 3/00; fluid-actuated telemotors, servomotors F15B; control devices in general G05)

B61D BODY DETAILS OR KINDS OF RAILWAY VEHICLES (vehicles in general B60; adaptation of vehicles to special systems B61B; underframes B61F)

Subclass index

Kinds of railway or tramway vehicles

1/00 **Carriages for ordinary railway passenger traffic** (mine cars B61D 11/00; tramcars B61D 13/00)
1/02 • General arrangements in sleeping or couchette carriages (B61D 1/08 takes precedence)
1/04 • General arrangements of seats (B61D 1/06 takes precedence; seats per se B61D 33/00)
1/06 • with multiple deck arrangement
1/08 • • of sleeping carriages

3/00 **Wagons or vans** (tank wagons B61D 5/00; hopper wagons B61D 7/00; tipping wagons B61D 9/00; mine cars B61D 11/00; vehicles adapted for animal transportation B60P 3/04)
3/02 • with multiple deck arrangements (for carrying vehicles B61D 3/18) **[4]**
3/04 • with movable floors, e.g. rotatable or floors which can be raised or lowered
3/06 • Flat-bottomed cars convertible into hoppers
3/08 • Flat wagons including posts or standards
3/10 • Articulated vehicles
3/12 • • comprising running gear interconnected by loads
3/14 • • comprising running gear interconnected by load supports facilitating low-level load transport
3/16 • adapted for carrying special loads **[4]**
3/18 • • for vehicles **[4]**
3/20 • • for forwarding containers **[4]**

5/00 **Tank wagons for carrying fluent materials** (tank aspects B65D 88/00, B65D 90/00, F17C)
5/02 • having more than one tank
5/06 • Mounting of tanks; Integral bodies and frames

7/00 **Hopper cars** (flat-bottomed cars convertible into hoppers B61D 3/06) **[2]**
7/02 • with discharge openings in the bottoms (with body in two halves and discharge by tipping the halves B61D 9/00)
7/04 • • the openings being above axle level during discharge
7/06 • with openings capable of discharging both between and outside the wheels
7/08 • with openings capable of discharging only outside the wheels
7/10 • • the discharge being assisted by tipping the bottom
7/12 • the hoppers being movable (B61D 9/00 takes precedence)
7/14 • Adaptations of hopper elements to railways
7/16 • • Closure elements for discharge openings
7/18 • • • pivoted
7/20 • • • sliding
7/22 • • • Sealing means thereof
7/24 • • • Opening or closing means
7/26 • • • • mechanical
7/28 • • • • hydraulic or pneumatic
7/30 • • • • controlled by means external to cars
7/32 • • Means for assisting charge or discharge

9/00 **Tipping wagons**
9/02 • characterised by operating means for tipping
9/04 • Adaptations of rail vehicle elements to tipping wagons
9/06 • • Bodies
9/08 • • Frames; Supporting or guiding means for the bodies
9/10 • • Devices preventing overturning when tipping
9/12 • • Body fitments or devices facilitating or controlling outflow on discharge
9/14 • Tipping systems controlled by trackside means

11/00 **Mine cars** (B61D 5/00-B61D 9/00 take precedence)
11/02 • Body construction

13/00 **Tramway vehicles**
13/02 • Double-deckers

15/00 **Other railway vehicles, e.g. scaffold cars; Adaptations of vehicles for use on railways** (conveyer frames mounted for movement on rail tracks B65G 41/02; wheeled machines used in permanent-way construction or maintenance E01B)
15/02 • Breakdown cranes (crane gear B66C)
15/04 • convertible into other non-vehicular apparatus, e.g. exhibition stands
15/06 • Buffer cars; Arrangements or construction of railway vehicles for protecting them in case of collisions (buffers B61G 11/00)
15/08 • Railway inspection trolleys
15/10 • • hand or foot-propelled
15/12 • • power-propelled

Body details of railway or tramway vehicles

17/00 **Construction details of vehicle bodies** (for tank wagons B61D 5/00; for hopper cars B61D 7/00; body details specially adapted for tipping wagons B61D 9/06; for mine cars B61D 11/00)
17/02 • reducing air resistance by modifying contour
17/04 • with bodies of metal; with composite, e.g. metal and wood, body structures
17/06 • • End walls
17/08 • • Sides
17/10 • • Floors
17/12 • • Roofs (movable or foldable roofs, covers, or tarpaulins B61D 39/00)
17/14 • • • with gangways
17/16 • • • Hatches in roofs
17/18 • • Internal lining, e.g. insulating
17/20 • • Communication passages between coaches; Adaptation of coach ends therefor
17/22 • • • flexible, e.g. bellows
17/24 • with body structures of wood
17/26 • with body structures of concrete

19/00 **Door arrangements peculiar to rail vehicles** (vehicle door arrangements in general B60J; vehicle locks E05B 65/12; door-operating mechanisms E05F)
19/02 • for carriages

23/00 **Construction of steps for railway vehicles** (ladders in general E06C)
23/02 • Folding steps for railway vehicles

25/00 **Window arrangements peculiar to rail vehicles** (vehicle window arrangements in general B60J; cleaning vehicle windows B60S; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84)

Heating, cooling, ventilating, lighting, or air-conditioning, peculiar to rail vehicles

27/00 **Heating, cooling, ventilating, or air-conditioning**

29/00 **Arrangement of lighting devices for rail vehicles**

Furniture or furnishings peculiar to rail vehicles

31/00 **Sleeping accommodation**

33/00 **Seats**

35/00 **Sanitation**

37/00 **Other furniture or furnishings**

Other details peculiar to rail vehicles

39/00 **Wagon or like covers; Tarpaulins; Movable or foldable roofs**

41/00 **Indicators for reserved seats; Warning or like signs; Devices or arrangements in connection with tickets, e.g. ticket holders; Holders for cargo tickets or the like**
41/02 • Holders or devices for cargo tickets or the like
41/04 • Indicators for reserved seats
41/06 • Holders for fare tickets

43/00 **Devices for using the energy of the movements of the vehicles**

45/00 **Means or devices for securing or supporting the cargo, including protection against shocks**

47/00 **Loading or unloading devices combined with vehicles, e.g. loading platforms** (combined with vehicles in general B60P)

49/00 **Other details**

B61F RAIL VEHICLE SUSPENSIONS, e.g. UNDERFRAMES, BOGIES, ARRANGEMENTS OF WHEEL AXLES; RAIL VEHICLES FOR USE ON TRACKS OF DIFFERENT WIDTH; PREVENTING DERAILING; WHEELS GUARDS; OBSTRUCTION REMOVERS OR THE LIKE (for vehicles in general B60; axles, wheels B60B; vehicle tyres B60C)

Subclass index

1/00 **Underframes** (making railway vehicle underframes by forging or pressing B21K 7/12)
1/02 • with a single central sill
1/04 • of triangulated type
1/06 • specially adapted for locomotives or motor-driven railcars
1/08 • Details
1/10 • • End constructions
1/12 • • Cross bearers
1/14 • • Attaching or supporting vehicle body structure

3/00 **Types of bogies** (B61F 5/00 takes precedence)
3/02 • with more than one axle
3/04 • • with driven axles or wheels

3/06 • • • with three or more axles
3/08 • • without driven axles or wheels
3/10 • • • with three or more axles
3/12 • specially modified for carrying adjacent vehicle bodies of articulated trains
3/14 • specially modified for reducing air resistance
3/16 • with a separate axle for each wheel

5/00 Constructional details of bogies; Connections between bogies and vehicle underframes; Arrangements or devices for adjusting or allowing self-adjustment of wheel axles or bogies when rounding curves
5/02 • Arrangements permitting limited transverse relative movements between vehicle underframe or bolster and bogie; Connections between underframes and bogies
5/04 • • Bolster supports or mountings (side bearings B61F 5/14)
5/06 • • • incorporating metal springs
5/08 • • • incorporating rubber springs
5/10 • • • incorporating fluid springs
5/12 • • • incorporating dampers
5/14 • • Side bearings
5/16 • • Centre bearings or other swivel connections between underframes and bolsters or bogies
5/18 • • • King-bolts
5/20 • • • with springs allowing transverse movements
5/22 • • Guiding of the vehicle underframes with respect to the bogies
5/24 • • • Means for damping or minimising the canting, skewing, pitching, or plunging movements of the underframes
5/26 • Mounting or securing axle-boxes in vehicle or bogie underframes
5/28 • • Axle-boxes integral with, or directly secured to, vehicle or bogie underframes
5/30 • • Axle-boxes mounted for movement under spring control in vehicle or bogie underframes
5/32 • • • Guides, e.g. plates, for axle-boxes
5/34 • • • • Wedge mechanisms for adjusting clearance between underframes and axles
5/36 • • • Arrangements for equalising or adjusting the load on wheels or springs, e.g. yokes
5/38 • Arrangements or devices for adjusting or allowing self-adjustment of wheel axles or bogies when rounding curves, e.g. sliding axles, swinging axles
5/40 • • Bogies with side frames mounted for longitudinal relative movements
5/42 • • Adjustment controlled by buffer or coupling gear
5/44 • • Adjustment controlled by movements of vehicle body
5/46 • • Adjustment controlled by a sliding axle under the same vehicle underframe
5/48 • • Trailing or leading bogies for locomotives or motor-driven railcars (B61F 5/40 takes precedence) **[2]**
5/50 • Other details
5/52 • • Bogie frames

7/00 Rail vehicles equipped for use on tracks of different width

9/00 Rail vehicles characterised by means for preventing derailing, e.g. by use of guide wheels

11/00 Rail vehicles characterised by rail-engaging elements other than wheels, e.g. balls

13/00 Rail vehicles characterised by wheel arrangements, not otherwise provided for

15/00 Axle-boxes (mounting or securing axle-boxes B61F 5/26; lubrication B61F 17/00; bearings in general F16C)
15/02 • with journal bearings
15/04 • • for locomotives
15/06 • • for cars
15/08 • • the axle being slidable or tiltable in the bearings
15/10 • • • and having springs opposing such movements
15/12 • with roller, needle, or ball bearings
15/14 • • constructed for taking-up axial pressure
15/16 • • the axle being slidable or tiltable in the bearings
15/18 • • • and having springs opposing such movements
15/20 • Details
15/22 • • Sealing means preventing entrance of dust or leakage of oil
15/24 • • • preventing oil leakage when vehicle is tilted or inverted
15/26 • • Covers; Sealing thereof
15/28 • • Axle-boxes modified to ensure electrical conductivity

17/00 Lubrication specially adapted for axle-boxes of rail vehicles (lubrication in general F16N)
17/02 • with oil
17/04 • • Lubrication by stationary devices
17/06 • • • by means of a wick or the like
17/08 • • • • Devices for pressing the wick or the like against the rotating axle
17/10 • • • by means of an oil bath
17/12 • • • by gravity
17/14 • • Rotating lubricating devices
17/16 • • • with rings
17/18 • • • with chains
17/20 • • • with scoops or the like attached to, or coupled with, the axle
17/22 • • • with discs, rollers, or belts engaging the axle
17/24 • • by built-in lubricating pumps
17/26 • • by external feeding means, e.g. pneumatic devices
17/28 • • Applications of oil cleaners not otherwise provided for
17/30 • with grease
17/32 • • by manually-operated lubricators, e.g. screw cups
17/34 • • by automatic means, e.g. with spring action
17/36 • with other, e.g. mixed, lubricating agents

19/00 Wheel guards; Bumpers; Obstruction removers or the like (for vehicles in general B60R 19/00)
19/02 • Wheel guards
19/04 • Bumpers or like collision guards
19/06 • Nets, catchers, or the like for catching obstacles or removing them from the track (mailbag catchers B61K 1/02)
19/08 • • of the drop-down type
19/10 • • • automatically operated by engagement with obstacle

99/00 Subject matter not provided for in other groups of this subclass [2006.01]

B61G COUPLINGS SPECIALLY ADAPTED FOR RAILWAY VEHICLES; DRAUGHT OR BUFFING APPLIANCES SPECIALLY ADAPTED FOR RAILWAY VEHICLES

Couplings peculiar to railway vehicles

1/00 Couplings comprising interengaging parts of different shape or form and having links, bars, pins, shackles, or hooks as coupling means

1/02 • having links or bars coupling or uncoupling by rotating around a transverse horizontal axis
1/04 • • Operating devices therefor (B61G 1/08 takes precedence)
1/06 • • and coupling when the coupling halves are pushed together
1/08 • • • Control devices therefor
1/10 • having links or bars coupling or uncoupling by rotating around a vertical axis
1/12 • • Operating devices therefor (B61G 1/16 takes precedence)
1/14 • • and coupling when the coupling halves are pushed together
1/16 • • • Control devices therefor
1/18 • having links or bars coupling or uncoupling by rotating axially
1/20 • • Operating devices therefor
1/22 • having screws incorporated in the links for lengthening or shortening the couplings
1/24 • • Operating devices therefor (B61G 1/26 takes precedence)
1/26 • • and coupling when the coupling halves are pushed together; Control devices therefor
1/28 • with vertical bolt or pin
1/30 • • Operating devices therefor
1/32 • with horizontal bolt or pin
1/34 • • Operating devices therefor
1/36 • with shackles and hooks, e.g. specially adapted for mine cars
1/38 • • rotatable about line of traction, e.g. for cars which are tiltable when coupled
1/40 • with coupling bars having an enlarged or recessed end which slips into the opposite coupling part and is gripped thereby, e.g. arrow-head type; with coupling parts having a tong-like gripping action
1/42 • • Operating devices therefor

3/00 Couplings comprising mating parts of similar shape or form which can be coupled without the use of any additional element or elements

3/02 • with interengaging movably-mounted hooks or links guided into alignment by a gathering device, e.g. "Dowty" type
3/04 • with coupling head having a guard arm on one side and a knuckle with angularly-disposed nose and tail portions pivoted to the other side thereof, the nose of the knuckle being the coupling part, and means to lock the knuckle in coupling position, e.g. "A.A.R." or "Janney" type
3/06 • • Knuckle-locking devices
3/08 • • Control devices, e.g. for uncoupling
3/10 • with coupling heads in the form of hook-like interengaging rigid jaws, e.g. "Willison" type
3/12 • • Jaw-locking devices
3/14 • • Control devices, e.g. for uncoupling
3/16 • with coupling heads rigidly connected by rotatable hook plates or discs and balancing links, the coupling members forming a parallelogram, e.g. "Scharfenberg" type
3/18 • • Locking devices
3/20 • • Control devices, e.g. for uncoupling
3/22 • with coupling heads rigidly connected by locks consisting of pivoted latches
3/24 • • Latch-locking devices
3/26 • • Control devices, e.g. for uncoupling
3/28 • with coupling heads rigidly connected by locks consisting of slidable pins
3/30 • with coupling heads rigidly connected by pins having locking noses which are brought into locking position by rotating the pins

5/00 Couplings not otherwise provided for

5/02 • for coupling articulated trains, locomotives and tenders, or the bogies of a vehicle; Coupling by means of a single coupling bar; Couplings preventing or limiting relative lateral movement of vehicles
5/04 • for matching couplings of different types, e.g. transitional couplings
5/06 • for, or combined with, couplings or connectors for fluid conduits or electric cables
5/08 • • for fluid conduits
5/10 • • for electric cables

7/00 Details or accessories

7/02 • Hand tools for coupling or uncoupling
7/04 • Coupling or uncoupling by means of trackside apparatus
7/06 • Coupling heads constructed to facilitate alignment
7/08 • Adjustable coupling heads
7/10 • Mounting of the couplings on the vehicle
7/12 • • Adjustable coupling bars, e.g. for centralisation purposes
7/14 • Safety devices

Draught or buffing appliances peculiar to railway or tramway vehicles

9/00 Draw-gear

9/02 • Draw-gear and non-integral buffing appliances with combined action or acting on the same spring
9/04 • Draw-gear combined with buffing appliances (continuous B61G 9/12)
9/06 • • with rubber springs
9/08 • • with fluid springs or fluid shock-absorbers; Combinations thereof
9/10 • • with separate mechanical friction shock-absorbers
9/12 • Continuous draw-gear combined with buffing appliances, e.g. incorporated in a centre sill
9/14 • • with rubber springs
9/16 • • with fluid springs or fluid shock-absorbers; Combinations thereof
9/18 • • with separate mechanical friction shock-absorbers
9/20 • Details; Accessories
9/22 • • Supporting framework, e.g. cradles; Spring housings

9/24 • • Linkages between draw-bar and framework (adjustable coupling bars B61G 7/12)

11/00 **Buffers** (springs F16F)
11/02 • with metal springs
11/04 • • with helical springs
11/06 • • • arranged to damp each other by mutual friction
11/08 • with rubber springs
11/10 • with combined rubber and metal springs
11/12 • with fluid springs or shock-absorbers; Combinations thereof
11/14 • absorbing shocks by mechanical friction action; Combinations of mechanical shock-absorbers and springs (B61G 11/06 takes precedence)
11/16 • absorbing shocks by permanent deformation of buffer element
11/18 • Details

B61H **BRAKES OR OTHER RETARDING APPARATUS PECULIAR TO RAIL VEHICLES; ARRANGEMENTS OR DISPOSITIONS OF BRAKES OR OTHER RETARDING APPARATUS IN RAIL VEHICLES** (electrodynamic braking of vehicles B60L, in general H02K; arrangements in rail vehicles for adjusting wheel-braking force to meet varying vehicular or permanent-way conditions B60T 8/00; transmitting braking action from initiating means to ultimate brake actuator with power assistance or drive, brake systems incorporating such transmitting means, e.g. air-pressure brake systems, B60T 13/00; construction, arrangement, or operation of valves incorporated in power brake systems B60T 15/00; component parts, details, or accessories of brake systems B60T 17/00; brakes in general F16D)

Subclass index

1/00 **Applications or arrangements of brakes with a braking member or members co-operating with the periphery of the wheel rim, a drum, or the like** (self-applying brakes B61H 11/02; combinations of different types of brakes B61H 11/14; wheels B60B)

3/00 **Applications or arrangements of brakes with an outwardly-movable braking member or members co-operating with the inner surface of a drum or the like** (self-applying brakes B61H 11/02; combinations of different types of brakes B61H 11/14)

5/00 **Applications or arrangements of brakes with substantially-radial braking surfaces pressed together in axial direction, e.g. disc brakes** (self-applying brakes B61H 11/02; combinations of different types of brakes B61H 11/14)

7/00 **Brakes with braking members co-operating with the track** (positive railway stops or track brakes secured to permanent way B61K 7/00)
7/02 • Scotch-blocks, skids, or like track-engaging shoes
7/04 • • attached to railway vehicles
7/06 • • • Skids
7/08 • • • • electromagnetically operated
7/10 • • unattached
7/12 • Grippers co-operating frictionally with tracks

9/00 **Brakes characterised by, or modified for, their application to special railway systems or purposes**
9/02 • for aerial, e.g. rope, railways
9/04 • for preventing or controlling movement in one direction or, selectively, in either direction
9/06 • for storing energy during braking action

11/00 **Applications or arrangements of braking or retarding apparatus not otherwise provided for; Combinations of apparatus of different kinds or types**
11/02 • of self-applying brakes
11/04 • • with brake-applying force derived from rotation of axle
11/06 • of hydrostatic, hydrodynamic, or aerodynamic brakes
11/08 • • comprising a pump or the like circulating fluid, braking being effected by throttling of the circulation
11/10 • • Aerodynamic brakes with control flaps, e.g. spoilers, attached to the vehicles
11/14 • Combinations of different types of brakes, e.g. brake blocks acting on wheel-rim combined with disc brakes
11/16 • Removable self-contained brake units

13/00 **Actuating rail-vehicle brakes** (self-applying brakes B61H 11/02; wear-compensating mechanisms B61H 15/00)
13/02 • Hand or other personal actuation
13/04 • • by mechanisms incorporating toothed gearing
13/06 • Actuating or influencing the brakes by backward-pressure of buffers or coupling gear, e.g. buffer brakes
13/20 • Transmitting mechanisms (wear-compensating mechanisms B61H 15/00)
13/22 • • for braking a single wheel or wheels at one side only, e.g. for locomotives or motor railcars
13/24 • • for cars with two axles or bogies with two axles and braking cylinder(s) for each bogie, the mechanisms at each side being interconnected
13/26 • • for cars or bogies with more than two axles or bogies, the mechanisms at each side being interconnected
13/28 • • with variable leverage or mechanical advantage to obtain quick take-up
13/30 • • adjustable to take account of variation of vehicle weight (arrangements for adjusting wheel-braking force in response to vehicle weight or load B60T 8/18)

13/32 • • • by varying brake lever leverage
13/34 • Details
13/36 • • Beams; Suspension thereof
13/38 • • Suspension of transmitting mechanisms (B61H 13/36 takes precedence)

15/00 Wear-compensating mechanisms, e.g. slack adjusters

B61J SHIFTING OR SHUNTING OF RAIL VEHICLES (shifting vehicles in general B60S; marshalling systems B61B)

1/00 Turntables; Traversers; Transporting rail vehicles on other rail vehicles or dollies (shunting B61J 3/00)
1/02 • Turntables; Integral stops
1/04 • • of normal railroad type
1/06 • • for railways with suspended vehicles, e.g. aerial rope railways
1/08 • • for connecting inclined tracks or tracks of different height (wagon elevators B66)
1/10 • Traversers
1/12 • Rollers or devices for shifting or transporting rail vehicles on rails

3/00 Shunting or short-distance haulage devices; Similar devices for hauling trains on steep gradients or as starting aids; Car-propelling devices therefor (overhead travelling cranes combined with auxiliary means for shunting railway vehicles B66C 17/26; capstans B66D)
3/02 • Gravity shunting humps (track brakes or retarding apparatus fixed to permanent way B61K 7/02)
3/04 • Car-shunting or haulage devices with cable traction or endless-chain driving means
3/06 • • with vehicle-engaging truck or carriage
3/08 • Devices with reciprocated pushing bars or like driving mechanisms combined with the track for shunting or hauling cars (railway systems of this kind B61B 13/12)
3/10 • Car-shunting or positioning devices with pinchbar action (pinchbars, crowbars in general B66F 15/00)
3/12 • Self-propelled tractors or pushing vehicles, e.g. mules (with cable traction B61J 3/06)

99/00 Subject matter not provided for in other groups of this subclass [2006.01]

B61K OTHER AUXILIARY EQUIPMENT FOR RAILWAYS (energy-storing brakes B61H; protection of permanent way against weather influences E01B; rail cleaning, snow ploughs E01H)

Subclass index

1/00 Transferring passengers, articles, or freight to and from moving trains; Slipping or coupling vehicles from or to moving trains
1/02 • transferring articles to and from moving trains, e.g. mailbag catchers

3/00 Wetting or lubricating rails or wheel flanges
3/02 • Apparatus therefor combined with vehicles

5/00 Apparatus for placing vehicles on the track; Derailers; Lifting or lowering rail vehicle axles or wheels (hoisting apparatus B66)
5/02 • Devices secured to the vehicles; Turntables integral with the vehicles
5/04 • Devices secured to the track
5/06 • • Derailing or re-railing blocks

7/00 Railway stops fixed to permanent way; Track brakes or retarding apparatus fixed to permanent way; Sand tracks or the like (skids, wedges, vehicle-mounted scotch blocks B61H; operating mechanisms for track-mounted scotch-blocks B61L)
7/02 • Track brakes or retarding apparatus
7/04 • • with clamping action
7/06 • • • operated mechanically
7/08 • • • operated pneumatically or hydraulically
7/10 • • electrodynamic (on vehicles B60L)
7/12 • • electrically controlled
7/14 • Sand or like tracks
7/16 • Positive railway stops
7/18 • • Buffer stops
7/20 • • Positive wheel stops
7/22 • • Axle stops

9/00 Railway vehicle profile gauges; Detecting or indicating overheating of components; Apparatus on locomotives or cars to indicate bad track sections; General design of track recording vehicles
9/02 • Profile gauges, e.g. loading gauges
9/04 • Detectors for indicating the overheating of axle bearings and the like, e.g. associated with the brake system for applying the brakes in case of a fault
9/06 • • by detecting or indicating heat radiation from overheated axles
9/08 • Measuring installations for surveying permanent way (applications of measuring apparatus or devices for track-building purposes E01B 35/00; measuring techniques G01)

9/10 • • for detecting cracks in rails or welds thereof

9/12 • Measuring or surveying wheel-rims (measuring techniques G01)

11/00 Serving peculiar to locomotives, e.g. filling with, or emptying of, water, sand, or the like at the depots (lifting or lowering axles or wheels B61K 5/00; filling stations for steam or pneumatic accumulator locomotives B61C 8/00; water or fuel supply fittings on locomotives B61C 17/02; refuelling locomotives with solid fuels B65G 67/18; washing or cleaning boilers F28G)

11/02 • Water columns for locomotives

13/00 Other auxiliaries or accessories for railways (safety belts or body harnesses A62B 35/00)

13/02 • Starting aids for cars amplifying the draw-bar pull and transmitting it to the wheels

13/04 • Passenger-warning devices attached to vehicles; Safety devices for preventing accidents to passengers when entering or leaving vehicles

B61L GUIDING RAILWAY TRAFFIC; ENSURING THE SAFETY OF RAILWAY TRAFFIC (power supply lines for electrically propelled vehicles B60M; arrangement of signalling devices, the mounting or supporting thereof or circuits therefor, for vehicles in general B60Q; brakes or auxiliary equipment B61H, B61K; point or crossing construction E01B; insulated rail joints E01B 11/54; optical devices in general G02; controlling in general G05; electric communication technique H04)

Note(s)

This subclass covers:
- devices along the route interacting with trains;
- signals;
- operation of points and signals;
- interlocking;
- block systems;
- level crossings.

Subclass index

1/00 Devices along the route controlled by interaction with the vehicle or vehicle train (detonators B61L 5/20; operation of points or signals by passage of the vehicle B61L 11/00, B61L 13/00; central traffic control systems controlled by train B61L 27/04; operation of gates, or gates and signals, by approaching vehicle B61L 29/18)

1/02 • Electric devices associated with track

1/04 • • mechanically actuated by a part of the vehicle

1/06 • • actuated by deformation of rail; actuated by vibration in rail

1/08 • • magnetically actuated; electrostatically actuated

1/10 • • actuated by electromagnetic radiation; actuated by particle radiation

1/12 • Electric devices associated with overhead trolley wires

1/14 • Devices for indicating the passing of the end of the vehicle or vehicle train

1/16 • Devices for counting axles; Devices for counting vehicles (counting moving objects in general G06M)

1/18 • Railway track circuits (automatically-operated track circuits specially adapted for section blocking for controlling traffic B61L 23/00; rail joints E01B 11/00)

1/20 • Safety arrangements for preventing or indicating malfunction of the device, e.g. by leakage current, by lightning

3/00 Devices along the route for controlling devices on the vehicle or vehicle train, e.g. to release brake, to operate a warning signal

3/02 • at selected places along the route, e.g. intermittent control

3/04 • • controlling mechanically

3/06 • • controlling by electromagnetic or particle radiation, e.g. by light beam (using radio waves B61L 3/12)

3/08 • • controlling electrically
3/10 • • • using current passing between devices along the route and devices on the vehicle train
3/12 • • • using magnetic or electrostatic induction; using radio waves
3/14 • • to cut-off the power supply to traction motors of electrically-propelled vehicles
3/16 • Continuous control along the route
3/18 • • using electric current passing between devices along the route and devices on the vehicle or vehicle train
3/20 • • • employing different frequencies or coded pulse groups
3/22 • • using magnetic or electrostatic induction; using electromagnetic radiation
3/24 • • • employing different frequencies or coded pulse groups

5/00 Local operating mechanisms for points or track-mounted scotch-blocks (track-mounted scotch-blocks per se B61K)**; Visible or audible signals; Local operating mechanisms for visible or audible signals** (B61L 11/00 takes precedence)
5/02 • Mechanical devices for operating points or scotch-blocks
5/04 • Fluid-pressure devices for operating points or scotch-blocks
5/06 • Electric devices for operating points or scotch-blocks
5/08 • Underground actuating arrangements, e.g. for tramways
5/10 • Locking mechanisms for points; Means for indicating the setting of points
5/12 • Visible signals
5/14 • • Form signals, e.g. semaphore arms
5/16 • • • Local operating mechanisms for form signals
5/18 • • Light signals; Mechanisms associated therewith, e.g. blinders
5/20 • Audible signals, e.g. detonator
5/22 • • Devices for initiating the release of detonators in a certain position of a signal
5/24 • • Replacement of detonators

7/00 Remote control of local operating means for points, signals, or track-mounted scotch-blocks (B61L 11/00 takes precedence; interlocking arrangements B61L 19/00)
7/02 • using mechanical transmission, e.g. wire, lever
7/04 • using fluid-pressure transmission
7/06 • using electrical transmission
7/08 • • Circuitry
7/10 • • • for light signals, e.g. for supervision, back-signalling

9/00 Illumination specially adapted for points, form signals, or gates (lighting in general F21)
9/02 • non-electric
9/04 • electric

11/00 Operation of points from the vehicle or by the passage of the vehicle
11/02 • using mechanical interaction between vehicle and track
11/04 • • Trailable point locks
11/06 • • with fluid-pressure transmission
11/08 • using electrical or magnetic interaction between vehicle and track

13/00 Operation of signals from the vehicle or by the passage of the vehicle
13/02 • using mechanical interaction between vehicle and track
13/04 • using electrical or magnetic interaction between vehicle and track

15/00 Indicators provided on the vehicle or vehicle train for signalling purposes
15/02 • Head or tail indicators, e.g. light

17/00 Switching systems for classification yards (rail brakes B61K)
17/02 • Details, e.g. indicating degree of track filling

19/00 Arrangements for interlocking between points and signals by means of a single interlocking device (station block arrangements B61L 21/00)
19/02 • Interlocking devices having mechanical or fluid-pressure operation
19/04 • • Details, e.g. hand lever, back-signalling device
19/06 • Interlocking devices having electrical operation
19/08 • • Special arrangements for power supply for interlocking devices
19/10 • • with mechanical locks
19/12 • • • Details
19/14 • • with electrical locks
19/16 • • • Details

21/00 Station blocking between signal boxes in one yard (interlocking between points and signals by means of a single interlocking device B61L 19/00)
21/02 • Mechanical locking and release of the route; Repeat locks; Coupling of semaphores
21/04 • Electrical locking and release of the route; Electrical repeat locks
21/06 • Vehicle-on-line indication; Monitoring locking and release of the route
21/08 • Order transmission and reception arrangements for giving or withholding permission
21/10 • Arrangements for trains which are closely following one another (automatic central traffic control systems B61L 27/04)

23/00 Control, warning or like safety means along the route or between vehicles or vehicle trains [4]
23/02 • for indicating along the route the failure of brakes
23/04 • for monitoring the mechanical state of the route
23/06 • for warning men working on the route
23/08 • for controlling traffic in one direction only (station blocking between signal boxes in one yard B61L 21/00)
23/10 • • manually operated
23/12 • • partly operated by train
23/14 • • automatically operated
23/16 • • • Track circuits specially adapted for section blocking
23/18 • • • specially adapted for maintaining a safe distance between vehicles or vehicle trains depending upon speed and traffic density **[1, 2006.01]**
23/20 • • • with transmission of instructions to stations along the route
23/22 • for controlling traffic in two directions over the same pair of rails (station blocking between signal boxes in one yard B61L 21/00)
23/24 • • using token systems, e.g. train staffs, tablets

23/26 • • with means for actuating signals from the vehicle or by passage of the vehicle
23/28 • • using non-automatic blocking from a place along the route
23/30 • • using automatic section blocking
23/32 • • • with provision for the blocking of passing sidings
23/34 • for indicating the distance between vehicles or vehicle trains by the transmission of signals therebetween **[4]**

25/00 Recording or indicating positions or identities of vehicles or vehicle trains or setting of track apparatus
25/02 • Indicating or recording positions or identities of vehicles or vehicle trains
25/04 • • Indicating or recording train identities
25/06 • Indicating or recording the setting of track apparatus, e.g. of points, of signals
25/08 • • Diagrammatic displays

27/00 Central traffic control systems
27/02 • Manual systems
27/04 • Automatic systems, e.g. controlled by train; Change-over to manual control

29/00 Safety means for rail/road crossing traffic
29/02 • Guards or obstacles for preventing access to the route (cattle guards connected to the permanent way E01B 17/00)
29/04 • Gates for level crossings
29/06 • • yielding to vehicles in one direction but operated in a different direction
29/08 • Operation of gates; Combined operation of gates and signals
29/10 • • Means for securing gates in their desired position
29/12 • • Manual operation
29/14 • • • mechanically
29/16 • • • electrically
29/18 • • Operation by approaching rail vehicle or rail vehicle train
29/20 • • • mechanically
29/22 • • • electrically
29/24 • Means for warning road traffic that a gate is closed or closing, or that rail traffic is approaching, e.g. for visible or audible warning
29/26 • • mechanically operated
29/28 • • electrically operated
29/30 • • • Supervision, e.g. monitoring arrangements
29/32 • • • Timing, e.g. advance warning of approaching train

99/00 Subject matter not provided for in other groups of this subclass [2006.01]