

CPC COOPERATIVE PATENT CLASSIFICATION

B PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B61 RAILWAYS

(NOTE omitted)

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

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00	Underframes (making railway vehicle underframes by forging or pressing B21K 7/12)	5/125 {with rubber elements (B61F 5/08 takes precedence)}
1/02	. with a single central sill	5/127 {with fluid as a damping medium}
1/04	. of triangulated type	5/14	. . Side bearings
1/06	. specially adapted for locomotives or motor-driven railcars	5/142	. . . {made of rubber elements, graphite or the like}
1/08	. Details	5/144	. . . {comprising fluid damping devices (B61F 5/146 takes precedence)}
1/10	. . End constructions	5/146	. . . {of the oil bath type; Lubrication devices for side bearings}
1/12	. . Cross bearers		
1/14	. . Attaching or supporting vehicle body-structure	5/148	. . . {between bolsterless bogies and underframes (B61F 5/142 - B61F 5/146 take precedence)}
3/00	Types of bogies (B61F 5/00 takes precedence)	5/16	. . Centre bearings or other swivel connections between underframes and bolsters or bogies
3/02	. with more than one axle	5/18	. . . King-bolts
3/04	. . with driven axles or wheels	5/20	. . . with springs allowing transverse movements
3/06	. . . with three or more axles	5/22	. . Guiding of the vehicle underframes with respect to the bogies
3/08	. . without driven axles or wheels		
3/10	. . . with three or more axles	5/24	. . . Means for damping or minimising the canting, skewing, pitching, or plunging movements of the underframes
3/12	. specially modified for carrying adjacent vehicle bodies of articulated trains		
3/125	. . {with more than one axle or wheel set}		
3/14	. specially modified for reducing air resistance	5/245 {by active damping, i.e. with means to vary the damping characteristics in accordance with track or vehicle induced reactions, especially in high speed mode}
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	5/26	. Mounting or securing axle-boxes in vehicle or bogie underframes
		5/28	. . Axle-boxes integral with, or directly secured to, vehicle or bogie underframes
5/02	. Arrangements permitting limited transverse relative movements between vehicle underframe or bolster and bogie; Connections between underframes and bogies	5/30	. . Axle-boxes mounted for movement under spring control in vehicle or bogie underframes {(B61F 5/36 takes precedence over B61F 5/305 - B61F 5/34)}
5/04	. . Bolster supports or mountings (side bearings B61F 5/14)	5/301	. . . {incorporating metal springs}
5/06	. . . incorporating metal springs	5/302 {Leaf springs}
5/08	. . . incorporating rubber springs	5/304 {Torsion-bar springs}
5/10	. . . incorporating fluid springs	5/305	. . . {incorporating rubber springs}
5/12	. . . incorporating dampers	5/307	. . . {incorporating fluid springs}
5/122 {with friction surfaces}	5/308	. . . {incorporating damping devices}
		5/32	. . . Guides, e.g. plates, for axle-boxes

- 5/325 {The guiding device including swinging arms or the like to ensure the parallelism of the axles}
- 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
- 5/383 . . {Adjustment controlled by non-mechanical devices, e.g. scanning trackside elements}
- 5/386 . . {fluid actuated}
- 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)
- 5/50 . Other details
- 5/52 . . Bogie frames
- 5/523 . . . {comprising parts made from fibre-reinforced matrix material}
- 5/526 . . . {comprising noise reducing devices}
- 7/00 Rail vehicles equipped for use on tracks of different width**
- 9/00 Rail vehicles characterised by means for preventing derailling, e.g. by use of guide wheels**
- 9/005 . {by use of non-mechanical means, e.g. acoustic or electromagnetic devices}
- 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**