

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.

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| 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 | 5/148 | . . . {between bolsterless bogies and underframes (B61F 5/142 - B61F 5/146 take precedence)} |
| 1/14 | . . Attaching or supporting vehicle body-structure | | |
| 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 | 5/24 | . . . Means for damping or minimising the canting, skewing, pitching, or plunging movements of the underframes |
| 3/10 | . . . with three or more axles | | |
| 3/12 | . specially modified for carrying adjacent vehicle bodies of articulated trains | 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} |
| 3/125 | . . {with more than one axle or wheel set} | | |
| 3/14 | . specially modified for reducing air resistance | 5/26 | . Mounting or securing axle-boxes in vehicle or bogie underframes |
| 3/16 | . with a separate axle for each wheel | 5/28 | . . Axle-boxes integral with, or directly secured to, vehicle or bogie underframes |
| 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 | 5/30 | . . 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)} |
| 5/02 | . Arrangements permitting limited transverse relative movements between vehicle underframe or bolster and bogie; Connections between underframes and bogies | 5/301 | . . . {incorporating metal springs} |
| 5/04 | . . Bolster supports or mountings (side bearings B61F 5/14) | 5/302 | {Leaf springs} |
| 5/06 | . . . incorporating metal springs | 5/304 | {Torsion-bar springs} |
| 5/08 | . . . incorporating rubber springs | 5/305 | . . . {incorporating rubber springs} |
| 5/10 | . . . incorporating fluid springs | 5/307 | . . . {incorporating fluid springs} |
| 5/12 | . . . incorporating dampers | 5/308 | . . . {incorporating damping devices} |
| 5/122 | {with friction surfaces} | 5/32 | . . . Guides, e.g. plates, for axle-boxes |

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| 5/325 | {The guiding device including swinging arms or the like to ensure the parallelism of the axles} | 17/02 | . with oil |
| 5/34 | Wedge mechanisms for adjusting clearance between underframes and axles | 17/04 | . . Lubrication by stationary devices |
| 5/36 | . . . Arrangements for equalising or adjusting the load on wheels or springs, e.g. yokes | 17/06 | . . . by means of a wick or the like |
| 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 | 17/08 | Devices for pressing the wick or the like against the rotating axle |
| 5/383 | . . {Adjustment controlled by non-mechanical devices, e.g. scanning trackside elements} | 17/10 | . . . by means of an oil bath |
| 5/386 | . . {fluid actuated} | 17/12 | . . . by gravity |
| 5/40 | . . Bogies with side frames mounted for longitudinal relative movements | 17/14 | . . Rotating lubricating devices |
| 5/42 | . . Adjustment controlled by buffer or coupling gear | 17/16 | . . . with rings |
| 5/44 | . . Adjustment controlled by movements of vehicle body | 17/18 | . . . with chains |
| 5/46 | . . Adjustment controlled by a sliding axle under the same vehicle underframe | 17/20 | . . . with scoops or the like attached to, or coupled with, the axle |
| 5/48 | . . Trailing or leading bogies for locomotives or motor- driven railcars (B61F 5/40 takes precedence) | 17/22 | . . . with discs, rollers, or belts engaging the axle |
| 5/50 | . Other details | 17/24 | . . by built-in lubricating pumps |
| 5/52 | . . Bogie frames | 17/26 | . . by external feeding means, e.g. pneumatic devices |
| 5/523 | . . . {comprising parts made from fibre-reinforced matrix material} | 17/28 | . . Applications of oil cleaners not otherwise provided for |
| 5/526 | . . . {comprising noise reducing devices} | 17/30 | . with grease |
| 7/00 | Rail vehicles equipped for use on tracks of different width | 17/32 | . . by manually-operated lubricators, e.g. screw cups |
| 9/00 | Rail vehicles characterised by means for preventing derailing, e.g. by use of guide wheels | 17/34 | . . by automatic means, e.g. with spring action |
| 9/005 | . {by use of non-mechanical means, e.g. acoustic or electromagnetic devices} | 17/36 | . with other, e.g. mixed, lubricating agents |
| 11/00 | Rail vehicles characterised by rail-engaging elements other than wheels, e.g. balls | 19/00 | Wheel guards; Bumpers; Obstruction removers or the like (for vehicles in general B60R 19/00) |
| 13/00 | Rail vehicles characterised by wheel arrangements, not otherwise provided for | 19/02 | . Wheel guards |
| 15/00 | Axle-boxes (mounting or securing axle-boxes B61F 5/26; lubrication B61F 17/00; bearings in general F16C) | 19/04 | . Bumpers or like collision guards |
| 15/02 | . with journal bearings | 19/06 | . Nets, catchers, or the like for catching obstacles or removing them from the track (mailbag catchers B61K 1/02) |
| 15/04 | . . for locomotives | 19/08 | . . of the drop-down type |
| 15/06 | . . for cars | 19/10 | . . . automatically operated by engagement with obstacle |
| 15/08 | . . the axle being slidable or tiltable in the bearings | 99/00 | Subject matter not provided for in other groups of this subclass |
| 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) | | |