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)
   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
   3/125 . . . [with more than one axle or wheel set]
   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
   5/122 . . . [with friction surfaces]
   5/125 . . . [with rubber elements (B61F 5/08 takes precedence)]
   5/127 . . . [with fluid as a damping medium]
   5/14 . . Side bearings
   5/142 . . . [made of rubber elements, graphite or the like]
   5/144 . . . [comprising fluid damping devices (B61F 5/146 takes precedence)]
   5/146 . . . [of the oil bath type; Lubrication devices for side bearings]
   5/148 . . . [between bolsterless bogies and underframes (B61F 5/142 - B61F 5/146 take precedence)]
   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
   5/245 . . . . [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]
   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 ([B61F 5/36 takes precedence over B61F 5/305 - B61F 5/34])
   5/301 . . . [incorporating metal springs]
   5/302 . . . . [Leaf springs]
   5/304 . . . . [Torsion-bar springs]
   5/305 . . . [incorporating rubber springs]
   5/307 . . . [incorporating fluid springs]
   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 derailing, 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)