

ECLA**EUROPEAN CLASSIFICATION****B61F**

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

B61F1/00

Underframes ([making railway vehicle underframes by forging or pressing B21K7/12](#))

B61F1/02

- . with a single central sill

B61F1/04

- . of triangulated type

B61F1/06

- . specially adapted for locomotives or motor-driven railcars

B61F1/08

- . Details

B61F1/10

- . . End constructions

B61F1/12

- . . Cross bearers

B61F1/14

- . . Attaching or supporting vehicle body-structure

B61F3/00

Types of bogies ([B61F5/00 takes precedence](#))

B61F3/02

- . with more than one axle

B61F3/04

- . . with driven axles or wheels

B61F3/06

- . . . with three or more axles

B61F3/08

- . . without driven axles or wheels

B61F3/10

- . . . with three or more axles

B61F3/12

- . specially modified for carrying adjacent vehicle bodies of articulated trains

B61F3/12B

- . . [N: with more than one axle or wheel set]

B61F3/14

- . specially modified for reducing air resistance

B61F3/16

- . with a separate axle for each wheel

B61F5/00

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

B61F5/02

- . Arrangements permitting limited transverse relative movements between vehicle underframe or bolster and bogie; Connections between underframes and bogies

B61F5/04

- . . Bolster supports or mountings ([side bearings B61F5/14](#))

B61F5/06

- . . . incorporating metal springs

B61F5/08

- . . . incorporating rubber springs

B61F5/10	. . . incorporating fluid springs
B61F5/12	. . . incorporating dampers
B61F5/12B [N: with friction surfaces]
B61F5/12C [N: with rubber elements (B61F5/08 takes precedence)]
B61F5/12D [N: with fluid as a damping medium]
B61F5/14	. . Side bearings
B61F5/14B	. . . [N: made of rubber elements, graphite or the like]
B61F5/14C	. . . [N: comprising fluid damping devices (B61F5/14D takes precedence)]
B61F5/14D	. . . [N: of the oil bath type; Lubrication devices for side bearings]
B61F5/14F	. . . [N: between bolsterless bogies and underframes (B61F5/14B - B61F5/14D take precedence)]
B61F5/16	. . Centre bearings or other swivel connections between underframes and bolsters or bogies
B61F5/18	. . . King-bolts
B61F5/20	. . . with springs allowing transverse movements
B61F5/22	. . Guiding of the vehicle underframes with respect to the bogies
B61F5/24	. . . Means for damping or minimising the canting, skewing, pitching, or plunging movements of the underframes
B61F5/24B [N: 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]
B61F5/26	. Mounting or securing axle-boxes in vehicle or bogie underframes
B61F5/28	. . Axle-boxes integral with, or directly secured to, vehicle or bogie underframes
B61F5/30	. . Axle-boxes mounted for movement under spring control in vehicle or bogie underframes ([N: B61F5/36 takes precedence over B61F5/30B - B61F5/34])
B61F5/30A	. . . [N: incorporating metal springs]
B61F5/30A2 [N: Leaf springs]
B61F5/30A3 [N: Torsion-bar springs]
B61F5/30B	. . . [N: incorporating rubber springs]
B61F5/30C	. . . [N: incorporating fluid springs]
B61F5/30D	. . . [N: incorporating damping devices]
B61F5/32	. . . Guides, e.g. plates, for axle-boxes
B61F5/32B [N: The guiding device including swinging arms or the like to ensure the parallelism of the axles]
B61F5/34 Wedge mechanisms for adjusting clearance between underframes and axles
B61F5/36	. . . Arrangements for equalising or adjusting the load on wheels or springs, e.g. yokes
B61F5/38	. Arrangements or devices for adjusting or allowing self- adjustment of wheel axles or bogies when rounding curves, e.g. sliding axles, swinging axles
B61F5/38B	. . [N: Adjustment controlled by non-mechanical devices, e.g. scanning trackside elements]
B61F5/38C	. . [N: fluid actuated]
B61F5/40	. . Bogies with side frames mounted for longitudinal relative movements
B61F5/42	. . Adjustment controlled by buffer or coupling gear

B61F5/44	. . Adjustment controlled by movements of vehicle body
B61F5/46	. . Adjustment controlled by a sliding axle under the same vehicle underframe
B61F5/48	. . Trailing or leading bogies for locomotives or motor- driven railcars (B61F5/40 takes precedence)
B61F5/50	. Other details
B61F5/52	. . Bogie frames
B61F5/52B	. . . [N: comprising parts made from fibre-reinforced matrix material]
B61F5/52C	. . . [N: comprising noise reducing devices]
B61F7/00	Rail vehicles equipped for use on tracks of different width
B61F9/00	Rail vehicles characterised by means for preventing derailing, e.g. by use of guide wheels
B61F9/00B	. [N: by use of non-mechanical means, e.g. acoustic or electromagnetic devices]
B61F11/00	Rail vehicles characterised by rail-engaging elements other than wheels, e.g. balls
B61F13/00	Rail vehicles characterised by wheel arrangements, not otherwise provided for
B61F15/00	Axle-boxes (mounting or securing axle-boxes B61F5/26 ; lubrication B61F17/00 ; bearings in general F16C)
B61F15/02	. with journal bearings
B61F15/04	. . for locomotives
B61F15/06	. . for cars
B61F15/08	. . the axle being slidable or tiltable in the bearings
B61F15/10	. . . and having springs opposing such movements
B61F15/12	. with roller, needle, or ball bearings
B61F15/14	. . constructed for taking-up axial pressure
B61F15/16	. . the axle being slidable or tiltable in the bearings
B61F15/18	. . . and having springs opposing such movements
B61F15/20	. Details
B61F15/22	. . Sealing means preventing entrance of dust or leakage of oil
B61F15/24	. . . preventing oil leakage when vehicle is tilted or inverted
B61F15/26	. . Covers; Sealing thereof
B61F15/28	. . Axle-boxes modified to ensure electrical conductivity
B61F17/00	Lubrication specially adapted for axle-boxes of rail vehicles (lubrication in general F16N)
B61F17/02	. with oil

- B61F17/04 . . Lubrication by stationary devices
- B61F17/06 . . . by means of a wick or the like
- B61F17/08 Devices for pressing the wick or the like against the rotating axle
- B61F17/10 . . . by means of an oil bath
- B61F17/12 . . . by gravity
- B61F17/14 . . Rotating lubricating devices
- B61F17/16 . . . with rings
- B61F17/18 . . . with chains
- B61F17/20 . . . with scoops or the like attached to, or coupled with, the axle
- B61F17/22 . . . with discs, rollers, or belts engaging the axle
- B61F17/24 . . by built-in lubricating pumps
- B61F17/26 . . by external feeding means, e.g. pneumatic devices
- B61F17/28 . . Applications of oil cleaners not otherwise provided for

- B61F17/30 . with grease
- B61F17/32 . . by manually-operated lubricators, e.g. screw cups
- B61F17/34 . . by automatic means, e.g. with spring action

- B61F17/36 . with other, e.g. mixed, lubricating agents

- B61F19/00** **Wheel guards; Bumpers; Obstruction removers or the like** (for vehicles in general [B60R19/00](#))

- B61F19/02 . Wheel guards

- B61F19/04 . Bumpers or like collision guards

- B61F19/06 . Nets, catchers, or the like for catching obstacles or removing them from the track
([mailbag catchers B61K1/02](#))
- B61F19/08 . . of the drop-down type
- B61F19/10 . . . automatically operated by engagement with obstacle

- B61F99/00** **Subject matter not provided for in other groups of this subclass** [\[N0704\]](#)