

CPC**COOPERATIVE PATENT CLASSIFICATION****E01B**

PERMANENT WAY; PERMANENT-WAY TOOLS; MACHINES FOR MAKING RAILWAYS OF ALL KINDS (derailing or rerailing blocks on track, track brakes or retarders [B61K](#))

Structure of the permanent way for railways or tramways

E01B 1/00 **Ballastway; Other means for supporting the sleepers or the track; Drainage of the ballastway** (draining by trenches, culverts, or conduits [E01F 5/00](#))

- E01B 1/001 . {Track with ballast}
- E01B 1/002 . {Ballastless track, e.g. concrete slab trackway, or with asphalt layers}
- E01B 1/004 . . {with prefabricated elements embedded in fresh concrete or asphalt}
- E01B 1/005 . . {with sleeper shoes}
- E01B 1/007 . . {with interlocking means to withstand horizontal forces}
- E01B 1/008 . {Drainage of track}

E01B 2/00 **General structure of permanent way** (railway networks [B61B 1/00](#); foundations for pavings [E01C 3/00](#); foundations in general [E02D](#))

- E01B 2/003 . {Arrangement of tracks on bridges or in tunnels}
- E01B 2/006 . {Deep foundation of tracks}

E01B 3/00 **Transverse or longitudinal sleepers** (for switches or crossings [E01B 7/22](#)); **Other means resting directly on the ballastway for supporting rails**

- E01B 3/02 . made from wood (drying or impregnating [B27K](#))
- E01B 3/04 . . Means for preventing cleaving
- E01B 3/06 . . . Anti-cracking dogs
- E01B 3/08 . . . Straps or bands for hooping or encircling sleepers (apparatus for hooping wooden railway sleepers on the spot [E01B 31/28](#))
- E01B 3/10 . . Composite sleepers
- E01B 3/12 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers
- E01B 3/14 . . Slabs; Blocks; Fastening tie-rods to them
- E01B 3/16 . made from steel
- E01B 3/18 . . Composite sleepers
- E01B 3/20 . . Sleeper construction for special purposes, e.g. with openings for ballast working (sleepers for shiftable track for heavy loads [E01B 23/12](#))
- E01B 3/22 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers
- E01B 3/24 . . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
- E01B 3/26 . . combined with inserts of wood artificial stone or other material
- E01B 3/28 . made from concrete or from natural or artificial stone (manufacture [B28](#))
- E01B 3/30 . . Hollow sleepers

- E01B 3/32 . . with armouring or reinforcement ([hollow sleepers E01B 3/30](#))
- E01B 3/34 . . . with pre-tensioned armouring or reinforcement ([pre-tensioned armouring or reinforcing elements E04C 5/00](#))
- E01B 3/36 . . Composite sleepers
- E01B 3/38 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers; Layers of concrete supporting both rails
- E01B 3/40 . . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
- E01B 3/42 . . combined with inserts of wood or other material
- E01B 3/44 . made from other materials only if the material is essential
- E01B 3/46 . made from different materials ([E01B 3/26](#), [E01B 3/42](#) take precedence)
- E01B 3/48 . Distance keepers or tie-rods for sleepers

E01B 5/00 Rails; Guard rails ([manufacture of rails B21B](#)); Distance-keeping means for them

- E01B 5/02 . Rails
- E01B 5/04 . . Grooved rails
- E01B 5/06 . . Reversible or invertible rails
- E01B 5/08 . . Composite rails; Compound rails with dismountable or non-dismountable parts
- E01B 5/10 . . . Composite grooved rails; Inserts for grooved rails
- E01B 5/12 . . Rails with a foot serving as a sleeper
- E01B 5/14 . . Rails for special parts of the track, e.g. for curves
- E01B 5/16 . Distance keepers
- E01B 5/18 . Guard rails; Connecting, fastening or adjusting means therefor

E01B 7/00 Switches; Crossings ([operating mechanisms B61L](#))

- E01B 7/02 . Tongues; Associated constructions
- E01B 7/04 . . Constructions with tongues turning about a vertical pivot at the end
- E01B 7/06 . . Constructions with flexible tongues or flexible fishplates
- E01B 7/08 . . Other constructions of tongues, e.g. tilting about an axis parallel to the rail, movable tongue blocks or rails
- E01B 7/10 . Frogs
- E01B 7/12 . . Fixed frogs made of one part or composite
- E01B 7/14 . . with movable parts
- E01B 7/16 . . Jump-over frogs
- E01B 7/18 . Combinations of switches and crossings
- E01B 7/20 . Safety means for switches, e.g. switch point protectors, auxiliary or guiding rail members
- E01B 7/22 . Special sleepers for switches or crossings; Fastening means therefor
- E01B 7/24 . Heating of switches
- E01B 7/26 . Lubricating of switches ([lubricating of rails B61K 3/00](#))
- E01B 7/28 . Crossings

- E01B 7/30
 - . . Jump-over crossings
- E01B 9/00** **Fastening rails on sleepers, or the like** ([fastening rails to bridges E01D 19/12](#))
- E01B 9/02
 - . Fastening rails, tie-plates, or chairs directly on sleepers or foundations; Means therefor
- E01B 9/04
 - . . Fastening on wooden or concrete sleepers or on masonry without clamp members
- E01B 9/06
 - . . . Railways spikes ([nails in general F16B](#))
- E01B 9/08
 - Elastic spikes
- E01B 9/10
 - . . . Screws or bolts for sleepers ([screws or bolts in general F16B](#))
- E01B 9/12
 - . . . Retaining or locking devices for spikes or screws
- E01B 9/14
 - . . . Plugs, sleeves, thread linings, or other inserts for holes in sleepers ([inserting plugs or sleeves E01B 31/26](#))
- E01B 9/16
 - for wooden sleepers
- E01B 9/18
 - for concrete sleepers
- E01B 9/20
 - . . . by keys
- E01B 9/22
 - . . Fastening on steel sleepers without clamp members
- E01B 9/24
 - . . . by keys
- E01B 9/26
 - . . . Welded fastenings
- E01B 9/28
 - . . Fastening on wooden or concrete sleepers or on masonry with clamp members
- E01B 9/30
 - . . . by resilient steel clips
- E01B 9/303
 - {the clip being a shaped bar}
- E01B 9/306
 - {the clip being a shaped plate}
- E01B 9/32
 - . . Fastening on steel sleepers with clamp members
- E01B 9/34
 - . . . by resilient steel clips
- E01B 9/36
 - . . Metal sole-plates for rails which rails are directly fastened to sleepers
- E01B 9/38
 - . Indirect fastening of rails by using tie-plates or chairs; Fastening of rails on the tie-plates or in the chairs
- E01B 9/40
 - . . Tie-plates for flat-bottom rails ([manufacture B21](#))
- E01B 9/42
 - . . . of two or more parts
- E01B 9/44
 - . . Fastening the rail on the tie-plate
- E01B 9/46
 - . . . by clamps
- E01B 9/48
 - by resilient steel clips
- E01B 9/483
 - {the clip being a shaped bar}
- E01B 9/486
 - {the clip being a shaped plate}
- E01B 9/50
 - . . . by keys
- E01B 9/52
 - by resilient keys
- E01B 9/54
 - . . Rail chairs
- E01B 9/56
 - . . . for rails with two or more treads
- E01B 9/58
 - . . Fastening the rail in the chair
- E01B 9/60
 - . Rail fastenings making use of clamps or braces supporting the side of the rail

- E01B 9/62 . Rail fastenings incorporating resilient supports
- E01B 9/64 . Rail fastenings gripping or encircling the sleeper
- E01B 9/66 . Rail fastenings allowing the adjustment of the position of the rails, so far as not included in the preceding groups
- E01B 9/68 . Pads or the like, e.g. of wood, rubber, placed under the rail, tie-plate, or chair

NOTE

If the subject to be classified has more than one characteristic, classification is made in group [E01B 9/68](#) and indexing codes for the different characteristics are given

- E01B 9/681 . . {characterised by the material}
- E01B 9/683 . . . {layered or composite}
- E01B 9/685 . . {characterised by their shape}
- E01B 9/686 . . . {with textured surface}
- E01B 9/688 . . . {with internal cavities}

E01B 11/00 Rail joints (electrical connection of the rail [B60M 5/00](#))

- E01B 11/02 . Dismountable rail joints
- E01B 11/04 . . Flat fishplates
- E01B 11/06 . . . with keys or pins
- E01B 11/08 . . Angle fishplates
- E01B 11/10 . . Fishplates with parts supporting or surrounding the rail foot
- E01B 11/12 . . Fishplates engaging only the rail foot
- E01B 11/14 . . Rail foot flange clips in one piece
- E01B 11/16 . . Fishplates for joining rails of different sections
- E01B 11/18 . . Fishplates for temporarily repairing broken rails
- E01B 11/20 . . with gap-bridging
- E01B 11/22 . . . by parts of the rails
- E01B 11/24 with oblique or overlapping rail ends
- E01B 11/26 with interlocking rail ends
- E01B 11/28 . . . by parts of the joining members
- E01B 11/30 Fishplates with integral tread parts lying in the cross-section of the rail head
- E01B 11/32 . . . by separate parts, Inserts bridging both rail heads
- E01B 11/34 Auxiliary rail beside gap
- E01B 11/36 . . Fastening means for fishplates
- E01B 11/38 . . . Loking arrangements for fastening means ([locking means for nuts or bolts in general F16B](#))
- E01B 11/40 . . Dismountable rail joints combined with welded parts
- E01B 11/42 . Joint constructions for relatively movable rails, e.g. rails on turntables, traversers, or swing bridges
- E01B 11/44 . Non-dismountable rail joints; Welded joints ([welding methods B23K](#))

- E01B 11/46 . . General methods for making gapless tracks
- E01B 11/48 . . Joints made by flame welding
- E01B 11/50 . . Joints made by electric welding
- E01B 11/52 . . Joints made by alumino-thermal welding
- E01B 11/54 . Electrically-insulating rail joints
- E01B 11/56 . Special arrangements for supporting rail ends ([foot supports E01B 11/08 to E01B 11/14](#))
- E01B 11/58 . . Bridge plates
- E01B 11/60 . . . with wedges
- E01B 11/62 . . Bridge chairs ([chairs E01B 9/54 to E01B 9/58](#))

- E01B 13/00 Arrangements preventing shifting of the track**
- E01B 13/02 . Rail anchors

- E01B 15/00 Guards for preventing a person's foot being trapped in grooved rails**

- E01B 17/00 Cattle guards connected to the permanent way** ([grids in general for preventing cattle from straying A01K 3/00](#))

- E01B 19/00 Protection of permanent way against development of dust or against the effect of wind, sun, frost, or corrosion; Means to reduce development of noise** ([snow fences E01F 7/02](#), [snow-ploughs E01H 8/02](#), [watering E01H 11/00](#))
- E01B 19/003 . {Means for reducing the development or propagation of noise}
- E01B 19/006 . {Means for protecting the underground against spillage}

- E01B 21/00 Track superstructure adapted for tramways in paved streets** ([paving E01C 9/04](#), [E01C 9/06](#))
- E01B 21/02 . Special supporting means; Draining of rails
- E01B 21/04 . Special fastenings, joint constructions, or tie-rods

- E01B 23/00 Easily dismountable or movable tracks, e.g. temporary railways; Details specially adapted therefor**
- E01B 23/02 . Tracks for light railways, e.g. for field, colliery, or mine use
- E01B 23/04 . . Fastening or joining means
- E01B 23/06 . . Switches ([turntables B60S](#), [B61J](#)); Portable switches; Turnouts
- E01B 23/08 . Temporary tracks for use while repairing tramways
- E01B 23/10 . Shiftable tracks for heavy loads, e.g. carrying excavators
- E01B 23/12 . . Sleepers
- E01B 23/14 . . Fastening or joining means ([fastening of rails by keys E01B 9/24](#))
- E01B 23/16 . . Switches

- E01B 25/00 Tracks for special kinds of railways** ([systems B61B](#); [wheel tracks on roads E01C 9/02](#))
- E01B 25/02 . Tracks for rack railways
- E01B 25/04 . . Rack rails; Supports or connections for rack rails

- E01B 25/06 . . Switches; Frogs; Crossings
- E01B 25/08 . Tracks for mono-rails with centre of gravity of vehicle above the load-bearing rail
- E01B 25/10 . . Mono-rails; Auxiliary balancing rails; Supports or connections for rails
- E01B 25/12 . . Switches; Crossings
- E01B 25/14 . Tracks for cable-drawn railway vehicles
- E01B 25/15 . . Switches; Crossings
- E01B 25/16 . Tracks for aerial rope railways with a stationary rope
- E01B 25/18 . . Ropers; Supports, fastening or straining means for ropes ([ropes in general D07B](#); [masts E04H 12/00](#); [ropes sockets F16G](#))
- E01B 25/20 . . Switches; Crossings
- E01B 25/22 . Tracks for railways with the vehicle suspended from rigid supporting rails
- E01B 25/24 . . Supporting rails; Auxiliary balancing rails; Supports or connections for rails
- E01B 25/26 . . Switches; Crossings
- E01B 25/28 . Rail tracks for guiding vehicles when running on road or similar surface ([wheel tracks on roads E01C 9/02](#))
- E01B 25/30 . Tracks for magnetic suspension or levitation vehicles
- E01B 25/30S . . {[Rails or supporting constructions](#)}
- E01B 25/32 . . Stators, guide rails or slide rails
- E01B 25/34 . . Switches; Frogs; Crossings
- E01B 26/00 Tracks or track components not covered by any one of the preceding groups**
- E01B 26/00S . {[Means for fixing posts, barriers, fences or the like to rails](#)}

Making, maintaining, renewing, or taking-up the ballastway or the track; Tools or machines specially designed therefor ([derailing or rerailling of machines B61K 5/00](#); [removal of foreign matter from the permanent way, vegetation control applying liquids E01H](#))

- E01B 27/00 Placing, renewing, working, cleaning, or taking-up the ballast, with or without concurrent work on the track; Devices therefor; Packing sleepers**
- E01B 27/02 . Placing the ballast; Making ballastway; Redistributing ballasting material; Machines or devices therefor; Levelling means
- E01B 27/021 . . {[by devices moving underneath the track, e.g. ballast sleighs](#)}
- E01B 27/022 . . {[by devices moving on the track with or without spreading or levelling](#)}
- E01B 27/023 . . {[Spreading, levelling or redistributing ballast already placed](#)}
- E01B 27/025 . . . {[by means of non-driven tools](#)}
- E01B 27/026 . . . {[by means of driven tools, e.g. rotating brooms or digging devices](#)}
- E01B 27/027 . . {[Loosening ballasting material](#)}
- E01B 27/028 . . {[Compacting ballasting material; Performing ballast cores or seats for sleepers](#)}
- E01B 27/04 . Removing the ballast; Machines therefor, whether or not additionally adapted for taking-up ballast ([E01B 27/06](#), [E01B 27/12 takes precedence](#); [redistributing ballasting material E01B 27/02](#))

- E01B 27/06
 - Renewing or cleaning the ballast in situ, with or without concurrent work on the track
- E01B 27/08
 - . the track having been taken-up ([E01B 27/11 takes precedence](#))
- E01B 27/10
 - . without taking-up track ([E01B 27/11 takes precedence](#))
- E01B 27/102
 - . . . {Removing unwanted material without removing the ballast}
- E01B 27/105
 - . . . {the track having been lifted}
- E01B 27/107
 - . . . {along between the tracks only}
- E01B 27/11
 - . combined with concurrent renewal of track components
- E01B 27/12
 - Packing sleepers, with or without concurrent work on the track; Compacting track-carrying ballast
- E01B 27/13
 - . Packing sleepers, with or without concurrent work on the track ([performing ballast cores or seats for sleepers E01B 27/02](#))
- E01B 27/14
 - . . Manual tools or hand-held power tools therefor
- E01B 27/16
 - . . Sleeper-tamping machines
- E01B 27/17
 - . . . combined with means for lifting, levelling or slewing the track
- E01B 27/18
 - . . . by introducing additional fresh material under the sleepers, e.g. by the measured-shovel method, by the blowing method
- E01B 27/20
 - . Compacting the material of the track-carrying ballastway, e.g. by vibrating the track, by surface vibrators ([of trackless ballastway E01B 27/02](#); [for packing sleepers E01B 27/12](#))

E01B 29/00 **Laying, rebuilding, or taking-up tracks; Tools or machines therefor**
([E01B 27/00](#), [E01B 31/00 take precedence](#))

- E01B 29/005
 - {Making of concrete parts of the track in situ}
- E01B 29/02
 - Transporting, laying, removing, or renewing lengths of assembled track, assembled switches, or assembled crossings ([E01B 29/04 takes precedence](#))
- E01B 29/04
 - Lifting or levelling of tracks ([lifting devices in general B66F](#))
- E01B 29/05
 - Transporting, laying, removing, or renewing both rails and sleepers ([as assembled units E01B 29/02](#))
- E01B 29/06
 - Transporting, laying, removing or renewing sleepers ([E01B 29/05 takes precedence](#); [carrying devices B65G 7/12](#))
- E01B 29/09
 - . under, or from under, installed rails
- E01B 29/10
 - . . for inserting or removing sleepers
- E01B 29/11
 - . . . Removal involving destruction of the sleeper, e.g. the sectioning thereof
- E01B 29/13
 - . . . for moving sleepers in a direction parallel to the rails, e.g. for spacing or aligning them ([E01B 29/10 takes precedence](#))
- E01B 29/14
 - . . . for lifting sleepers up to the rails ([lifting devices in general B66F](#))
- E01B 29/16
 - Transporting, laying, removing, or replacing rails; Moving rails placed on sleepers in the track ([E01B 29/05 takes precedence](#); [moving or tilting heavy loads in general B65G 7/00](#))
- E01B 29/17
 - . Lengths of rails assembled into strings, e.g. welded together
- E01B 29/20
 - . Moving rails placed on installed sleepers in the plane track
- E01B 29/22
 - . Raising rails from sleepers, e.g. for inserting sole-plates ([lifting devices in general B66F](#))

- E01B 29/24
 - Fixing or removing detachable fastening means or accessories thereof; Pre-assembling track components by detachable fastening means ([E01B 29/02](#), [E01B 31/26](#) take precedence)
- E01B 29/26
 - . the fastening means being spikes ([E01B 29/16](#) takes precedence; hand-held tools for nail or staple driving or extracting [B25C](#))
- E01B 29/28
 - . the fastening means being of screw-and-nut type ([portable apparatus for fixing or removing screws or the like B25B](#)); Apparatus therefor, adapted to additionally drilling holes
- E01B 29/29
 - . . for horizontally-arranged fastening elements, e.g. fish-bolts
- E01B 29/32
 - Installing or removing track components, not covered by the preceding groups, e.g. sole-plates, rail anchors ([E01B 31/26](#) takes precedence)
- E01B 29/40
 - Means or arrangements for temporarily supporting laid tracks, or rails or sleepers in the track ([temporary fishplates E01B 11/18](#))
- E01B 29/42
 - Undetachably joining or fastening track components in or on the track, e.g. by welding, by gluing; Pre-assembling track components by gluing; Sealing joints with filling components ([E01B 31/26](#) takes precedence; [independent heating means E01B 31/18](#); [welding in general B23K](#); [gluing metal parts in general F16B 11/00](#))
- E01B 29/44
 - . Methods for effecting joining of rails in the track, e.g. taking account of ambient temperature
- E01B 29/46
 - . Devices for holding, positioning, or urging together the rail ends ([adjusting the joint by moving rails E01B 29/20](#))
- E01B 31/00**
 - **Working rails, sleepers, baseplates, or the like, in or on the line; Machines, tools, or auxiliary devices specially designed therefor** ([characterised by features independent of use on assembled track B21](#), [B23](#) to [B25](#), [B27](#))
- E01B 31/02
 - Working rail or other metal track components on the spot
- E01B 31/04
 - . Sectioning or slitting, e.g. by sawing, shearing, flame-cutting
- E01B 31/06
 - . Making holes, e.g. by drilling, punching, flame-cutting
- E01B 31/08
 - . Bending, e.g. for straightening rails or rail joints ([for aligning rail ends to be welded E01B 29/46](#))
- E01B 31/12
 - . Removing metal from rails, rail joints, or baseplates, e.g. for deburring welds, reconditioning worn rails
- E01B 31/13
 - . . by milling
- E01B 31/15
 - . . by planing or filing
- E01B 31/17
 - . . by grinding
- E01B 31/175
 - . . . {using grinding belts}
- E01B 31/18
 - . Reconditioning or repairing worn or damaged parts on the spot, e.g. applying inlays, building-up rails by welding ([E01B 31/04](#) to [E01B 31/12](#) take precedence); Heating or cooling of parts on the spot, e.g. for reducing joint gaps, for hardening rails
- E01B 31/20
 - Working or treating non-metal sleepers in or on the line, e.g. marking, creosoting ([working metal sleepers E01B 31/02](#))
- E01B 31/22
 - . Cutting or grinding wooden sleepers, e.g. for forming rail seats ([E01B 31/24](#) takes precedence)
- E01B 31/23
 - . . Sectioning ([combined with removal of segments from track E01B 29/11](#))

- E01B 31/24
 - . Forming, treating, reconditioning, or cleaning holes in sleepers; Drilling-templates ([E01B 29/28](#), [E01B 31/26](#) take precedence)
- E01B 31/26
 - . Inserting or removing inserts or fillings for holes in sleepers, e.g. plugs, sleeves
- E01B 31/28
 - . Applying or removing anti-splitting or like reinforcing means ([E01B 31/26](#) takes precedence; straps or bands therefor [E01B 3/08](#))

E01B 33/00 **Machines or devices for shifting tracks, with or without lifting, e.g. for aligning track, for shifting excavator track (combined with sleeper packing machines [E01B 27/17](#))**

- E01B 33/02
 - for slewing, i.e. transversely shifting, in steps
- E01B 33/04
 - . Manual tools; Devices not mounted on vehicles
- E01B 33/06
 - for slewing in a continuous operation, e.g. for tracks which carry excavators
- E01B 33/08
 - . Boom track-slewing machines
- E01B 33/10
 - . Bridge track-slewing machines
- E01B 33/12
 - . Combined boom and bridge track-slewing machines
- E01B 33/18
 - . Details not peculiar to a particular type of machine
- E01B 33/21
 - . . Arrangement or construction of rollers moving the rails

E01B 35/00 **Applications of measuring apparatus or devices for track-building purposes (apparatus on locomotives or cars to indicate or record bad track sections [B61K 9/00](#); measuring angles, linear dimensions, or irregularities in general [G01B](#), [G01C](#))**

- E01B 35/02
 - for spacing, for cross levelling; for laying-out curves
- E01B 35/04
 - . Wheeled apparatus
- E01B 35/06
 - for measuring irregularities in longitudinal direction
- E01B 35/08
 - . for levelling
- E01B 35/10
 - . for aligning
- E01B 35/12
 - for measuring movement of the track or of the components thereof under rolling loads, e.g. depression of sleepers, increase of gauge

E01B 37/00 **Making, maintaining, renewing, or taking-up the ballastway or the track, not provided for in a single one of groups [E01B 27/00](#) to [E01B 35/00](#)**

E01B 2201/00 **Fastening or restraining methods**

- E01B 2201/02
 - by wedging action
- E01B 2201/04
 - by bolting, nailing or the like
- E01B 2201/06
 - by eccentric or levering action
- E01B 2201/08
 - by plastic or elastic deformation of fastener
- E01B 2201/10
 - in alternative ways, e.g. glueing, welding, form-fits

Making, maintaining, renewing, or taking-up the ballastway or the track; Tools or machines specially designed therefor ([derailing or rerailing of machines B61K 5/00](#); [removal of foreign matter from the permanent way, vegetation control applying liquids E01H](#))

E01B 2202/00 **Characteristics of moving parts of rail systems, e.g. switches, special frogs, tongues**

- E01B 2202/02 . Nature of the movement
- E01B 2202/021 . . Turning or tilting or elastically bending
- E01B 2202/022 . . . about horizontal axis
- E01B 2202/024 . . . about vertical axis
- E01B 2202/025 . . Pure translation
- E01B 2202/027 . . Including a component perpendicular to the plane of the rails
- E01B 2202/028 . . . Movement along an inclined surface
- E01B 2202/04 . Nature of the support or bearing
- E01B 2202/042 . . Sliding
- E01B 2202/044 . . Rolling
- E01B 2202/046 . . . with rolls on fixed part
- E01B 2202/048 . . . with rolls on moving part
- E01B 2202/06 . . Use of friction-reducing surfaces
- E01B 2202/08 . Locking devices or mechanisms for inhibiting movement

E01B 2203/00 **Devices for working the railway-superstructure**

- E01B 2203/01 . with track
- E01B 2203/012 . . present, i.e. in its normal position
- E01B 2203/015 . . present but lifted
- E01B 2203/017 . . removed or not present yet
- E01B 2203/02 . Removing or re-contouring ballast
- E01B 2203/021 . . Blowing
- E01B 2203/022 . . Horizontal chain
- E01B 2203/024 . . Inclined chain
- E01B 2203/025 . . Suction
- E01B 2203/027 . . Sweeping
- E01B 2203/028 . . Alternative ways
- E01B 2203/03 . Displacing or storing ballast
- E01B 2203/032 . . with special use or configuration of conveyor belts
- E01B 2203/034 . . using storing containers
- E01B 2203/036 . . . fixed to vehicle
- E01B 2203/038 . . . detachable from the vehicle
- E01B 2203/04 . Cleaning or reconditioning ballast or ground beneath
- E01B 2203/042 . . in situ, e.g. vacuum-cleaners

- E01B 2203/045
 - . . the ballast having been taken up
- E01B 2203/047
 - . . Adding material, e.g. tar, glue, protective layers
- E01B 2203/06
 - . Placing ballast
- E01B 2203/062
 - . . New ballast
- E01B 2203/065
 - . . Re-use of ballast
- E01B 2203/067
 - . . Special methods for posing or quantifying ballast
- E01B 2203/08
 - . Levelling ballast or ground beneath
- E01B 2203/083
 - . . Ploughs
- E01B 2203/086
 - . . Rotating brooms
- E01B 2203/10
 - . Track-lifting or-lining devices or methods
- E01B 2203/12
 - . Tamping devices
- E01B 2203/122
 - . . for straight track
- E01B 2203/125
 - . . adapted for switches or crossings
- E01B 2203/127
 - . . vibrating the track surface
- E01B 2203/14
 - . Way of locomotion or support
- E01B 2203/141
 - . . on the track to be treated
- E01B 2203/143
 - . . on a side-track
- E01B 2203/145
 - . . on the ballast
- E01B 2203/146
 - . . using other means than driven wheels as propulsion means
- E01B 2203/148
 - . . having wheelsets that can be displaced horizontally or vertically
- E01B 2203/15
 - . Reducing impact of devices on environment
- E01B 2203/16
 - . Guiding or measuring means, e.g. for alignment, canting, stepwise propagation
- E01B 2203/17
 - . continually advancing

E01B 2204/00

Characteristics of the track and its foundations

- E01B 2204/01
 - . Elastic layers other than rail-pads, e.g. sleeper-shoes, bituconcrete
- E01B 2204/02
 - . Ballast bags
- E01B 2204/03
 - . Injecting, mixing or spraying additives into or onto ballast or underground
- E01B 2204/04
 - . Direct mechanical or chemical fixing of sleepers onto underground
- E01B 2204/05
 - . Use of geotextiles
- E01B 2204/06
 - . Height or lateral adjustment means or positioning means for slabs, sleepers or rails
- E01B 2204/07
 - . Drainage
- E01B 2204/08
 - . Deep or vertical foundation
- E01B 2204/09
 - . Ballastless systems
- E01B 2204/10
 - . Making longitudinal or transverse sleepers or slabs in situ or embedding them
- E01B 2204/11
 - . Embedded tracks, using prefab elements or injecting or pouring a curable material
- E01B 2204/12
 - . Floating rails or sleepers
- E01B 2204/13
 - . Dowels for slabs, sleepers or rail-fixings
- E01B 2204/14
 - . Vegetation on or around railway-tracks

Making, maintaining, renewing, or taking-up the ballastway or the track;
Tools or machines specially designed therefor

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[E01B 2204/15](#) . Layout or geometry of the track

[E01B 2204/16](#) . Specific granulometry of the ballast

[E01B 2205/00](#) **Electrical insulation of railway track parts**