

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

**PERMANENT WAY; PERMANENT-WAY TOOLS; MACHINES FOR MAKING RAILWAYS OF ALL KINDS** (derailing or rerailling 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
<b>E01B 9/00</b>		<b>Fastening rails on sleepers, or the like</b> ( <a href="#">fastening rails to bridges E01D 19/12</a> )
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 ( <a href="#">nails in general F16B</a> )
E01B 9/08	....	Elastic spikes
E01B 9/10	...	Screws or bolts for sleepers ( <a href="#">screws or bolts in general F16B</a> )
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 ( <a href="#">inserting plugs or sleeves E01B 31/26</a> )
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 ( <a href="#">manufacture B21</a> )
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 <a href="#">E01B 11/08</a> to <a href="#">E01B 11/14</a> )
E01B 11/58	.. Bridge plates
E01B 11/60	... with wedges
E01B 11/62	.. Bridge chairs ( <a href="#">chairs E01B 9/54</a> to <a href="#">E01B 9/58</a> )
<b>E01B 13/00</b>	<b>Arrangements preventing shifting of the track</b>
E01B 13/02	. Rail anchors
<b>E01B 15/00</b>	<b>Guards for preventing a person`s foot being trapped in grooved rails</b>
<b>E01B 17/00</b>	<b>Cattle guards connected to the permanent way</b> ( <a href="#">grids in general for preventing cattle from straying A01K 3/00</a> )
<b>E01B 19/00</b>	<b>Protection of permanent way against development of dust or against the effect of wind, sun, frost, or corrosion; Means to reduce development of noise</b> ( <a href="#">snow fences E01F 7/02</a> , <a href="#">snow-ploughs E01H 8/02</a> , <a href="#">watering E01H 11/00</a> )
E01B 19/003	. {Means for reducing the development or propagation of noise}
E01B 19/006	. {Means for protecting the underground against spillage}
<b>E01B 21/00</b>	<b>Track superstructure adapted for tramways in paved streets</b> ( <a href="#">paving E01C 9/04</a> , <a href="#">E01C 9/06</a> )
E01B 21/02	. Special supporting means; Draining of rails
E01B 21/04	. Special fastenings, joint constructions, or tie-rods
<b>E01B 23/00</b>	<b>Easily dismountable or movable tracks, e.g. temporary railways; Details specially adapted therefor</b>
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 ( <a href="#">turntables B60S</a> , <a href="#">B61J</a> ); 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 ( <a href="#">fastening of rails by keys E01B 9/24</a> )
E01B 23/16	.. Switches
<b>E01B 25/00</b>	<b>Tracks for special kinds of railways</b> ( <a href="#">systems B61B</a> ; <a href="#">wheel tracks on roads E01C 9/02</a> )
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 25/305 . . {[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 26/005 . {[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 rerailing 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](#)**

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**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
- 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**