

ECLA EUROPEAN 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)

Guide heading: Structure of the permanent way for railways or tramways

E01B1/00 Ballastway; Other means for supporting the sleepers or the track; Drainage of the ballastway (draining by trenches, culverts, or conduits [E01F5/00](#))

E01B1/00B . [N: Track with ballast] [N0310]

E01B1/00C . [N: Ballastless track, e.g. concrete slab trackway, or with asphalt layers] [N0310]

E01B1/00C1 . . [N: with prefabricated elements embedded in fresh concrete or asphalt] [N0310]

E01B1/00C2 . . [N: with sleeper shoes] [N0310]

E01B1/00C3 . . [N: with interlocking means to withstand horizontal forces] [N0310]

E01B1/00D . [N: Drainage of track] [N0310]

E01B2/00 General structure of permanent way (railway networks [B61B1/00](#); foundations for pavings [E01C3/00](#); foundations in general [E02D](#))

E01B2/00B . [N: Arrangement of tracks on bridges or in tunnels] [N0310]

E01B2/00C . [N: Deep foundation of tracks] [N0310]

E01B3/00 Transverse or longitudinal sleepers (for switches or crossings [E01B7/22](#)); Other means resting directly on the ballastway for supporting rails

E01B3/02 . made from wood (drying or impregnating [B27K](#))

E01B3/04 . . Means for preventing cleaving

E01B3/06 . . . Anti-cracking dogs

E01B3/08 . . . Straps [E01D3/06](#) or bands for hooping or encircling sleepers (apparatus for hooping wooden railway sleepers on the spot [E01B31/28](#))

E01B3/10 . . Composite sleepers

E01B3/12 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers

E01B3/14 . . Slabs; Blocks; Fastening tie-rods to them

E01B3/16 . made from steel

E01B3/18 . . Composite sleepers

E01B3/20 . . Sleeper construction for special purposes, e.g. with openings for ballast working (sleepers for shiftable track for heavy loads [E01B23/12](#))

E01B3/22 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods;

- Combined longitudinal and transverse sleepers
- E01B3/24 . . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
- E01B3/26 . . combined with inserts of wood artificial stone or other material
- E01B3/28 . made from concrete or from natural or artificial stone ([manufacture B28](#))
- E01B3/30 . . Hollow sleepers
- E01B3/32 . . with armouring or reinforcement ([hollow sleepers E01B3/30](#))
- E01B3/34 . . . with pre-tensioned armouring or reinforcement ([pre-tensioned armouring or reinforcing elements E04C5/00](#))
- E01B3/36 . . Composite sleepers
- E01B3/38 . . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers; Layers of concrete supporting both rails
- E01B3/40 . . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
- E01B3/42 . . combined with inserts of wood or other material
- E01B3/44 . made from other materials only if the material is essential
- E01B3/46 . made from different materials ([E01B3/26](#), [E01B3/42](#) take precedence)
- E01B3/48 . Distance keepers or tie-rods for sleepers
- E01B5/00 Rails; Guard rails ([manufacture of rails B21B](#)); Distance-keeping means for them**
- E01B5/02 . Rails
- E01B5/04 . . Grooved rails
- E01B5/06 . . Reversible or invertible rails
- E01B5/08 . . Composite rails; Compound rails with dismountable or non-dismountable parts
- E01B5/10 . . . Composite grooved rails; Inserts for grooved rails
- E01B5/12 . . Rails with a foot serving as a sleeper
- E01B5/14 . . Rails for special parts of the track, e.g. for curves
- E01B5/16 . Distance keepers
- E01B5/18 . Guard rails; Connecting, fastening or adjusting means therefor
- E01B7/00 Switches; Crossings ([operating mechanisms B61L](#))**
- E01B7/02 . Tongues; Associated constructions
- E01B7/04 . . Constructions with tongues turning about a vertical pivot at the end
- E01B7/06 . . Constructions with flexible tongues or flexible fishplates
- E01B7/08 . . Other constructions of tongues, e.g. tilting about an axis parallel to the rail, movable tongue blocks or rails
- E01B7/10 . Frogs
- E01B7/12 . . Fixed frogs made of one part or composite [[C9409](#)]

- E01B7/14 . . with movable parts [\[N9409\]](#)
- E01B7/16 . . Jump-over frogs
- E01B7/18 . Combinations of switches and crossings
- E01B7/20 . Safety means for switches, e.g. switch point protectors, auxiliary or guiding rail members
- E01B7/22 . Special sleepers for switches or crossings; Fastening means therefor
- E01B7/24 . Heating of switches
- E01B7/26 . Lubricating of switches ([lubricating of rails B61K3/00](#))
- E01B7/28 . Crossings
- E01B7/30 . . Jump-over crossings

- E01B9/00** **Fastening rails on sleepers, or the like** ([fastening rails to bridges E01D19/12](#))

- E01B9/02 . Fastening rails, tie-plates, or chairs directly on sleepers or foundations; Means therefor
- E01B9/04 . . Fastening on wooden or concrete sleepers or on masonry without clamp members
- E01B9/06 . . . Railways spikes ([nails in general F16B](#))
- E01B9/08 Elastic spikes
- E01B9/10 Screws or bolts for sleepers ([screws or bolts in general F16B](#))
- E01B9/12 Retaining or locking devices for spikes or screws
- E01B9/14 Plugs, sleeves, thread linings, or other inserts for holes in sleepers ([inserting plugs or sleeves E01B31/26](#))
- E01B9/16 for wooden sleepers
- E01B9/18 for concrete sleepers
- E01B9/20 by keys
- E01B9/22 . . Fastening on steel sleepers without clamp members
- E01B9/24 by keys
- E01B9/26 Welded fastenings
- E01B9/28 . . Fastening on wooden or concrete sleepers or on masonry with clamp members
- E01B9/30 by resilient steel clips
- E01B9/30B [\[N: the clip being a shaped bar\]](#)
- E01B9/30C [\[N: the clip being a shaped plate\]](#)
- E01B9/32 . . Fastening on steel sleepers with clamp members
- E01B9/34 by resilient steel clips
- E01B9/36 . . Metal sole-plates for rails which rails are directly fastened to sleepers

- E01B9/38 . Indirect fastening of rails by using tie-plates or chairs; Fastening of rails on the tie-plates or in the chairs
- E01B9/40 . . Tie-plates for flat-bottom rails ([manufacture B21](#))
- E01B9/42 of two or more parts

- E01B9/44 . . Fastening the rail on the tie-plate
- E01B9/46 . . . by clamps
- E01B9/48 by resilient steel clips
- E01B9/48B [N: the clip being a shaped bar]
- E01B9/48C [N: the clip being a shaped plate]
- E01B9/50 . . . by keys
- E01B9/52 by resilient keys
- E01B9/54 . . Rail chairs
- E01B9/56 . . . for rails with two or more treads
- E01B9/58 . . Fastening the rail in the chair

- E01B9/60 . Rail fastenings making use of clamps or braces supporting the side of the rail
- E01B9/62 . Rail fastenings incorporating resilient supports
- E01B9/64 . Rail fastenings gripping or encircling the sleeper
- E01B9/66 . Rail fastenings allowing the adjustment of the position of the rails, so far as not included in the preceding groups

- E01B9/68 . Pads or the like, e.g. of wood, rubber, placed under the rail, tie-plate, or chair

- [N: **Note**
 [N0311]If the subject to be classified has more than one characteristic, classification is made in group [E01B9/68](#) and ICO-symbols for the different characteristics are given]
- E01B9/68B . . [N: characterised by the material] [N0311]
- E01B9/68B1 . . . [N: layered or composite] [N0311]
- E01B9/68C . . [N: characterised by their shape] [N0311]
- E01B9/68C1 . . . [N: with textured surface] [N0311]
- E01B9/68C2 . . . [N: with internal cavities] [N0311]

- E01B11/00** **Rail joints** (electrical connection of the rail [B60M5/00](#))

- E01B11/02 . Dismountable rail joints
- E01B11/04 . . Flat fishplates
- E01B11/06 . . . with keys or pins
- E01B11/08 . . Angle fishplates
- E01B11/10 . . Fishplates with parts supporting or surrounding the rail foot
- E01B11/12 . . Fishplates engaging only the rail foot
- E01B11/14 . . Rail foot flange clips in one piece
- E01B11/16 . . Fishplates for joining rails of different sections
- E01B11/18 . . Fishplates for temporarily repairing broken rails
- E01B11/20 . . with gap-bridging
- E01B11/22 . . . by parts of the rails
- E01B11/24 with oblique or overlapping rail ends

- E01B11/26 with interlocking rail ends
- E01B11/28 . . . by parts of the joining members
- E01B11/30 Fishplates with integral tread parts lying in the cross-section of the rail head
- E01B11/32 . . . by separate parts, Inserts bridging both rail heads
- E01B11/34 Auxiliary rail beside gap
- E01B11/36 . . Fastening means for fishplates
- E01B11/38 . . . Loking arrangements for fastening means ([locking means for nuts or bolts in general F16B](#))
- E01B11/40 . . Dismountable rail joints combined with welded parts

- E01B11/42 . Joint constructions for relatively movable rails, e.g. rails on turntables, traversers, or swing bridges

- E01B11/44 . Non-dismountable rail joints; Welded joints ([welding methods B23K](#))
- E01B11/46 . . General methods for making gapless tracks
- E01B11/48 . . Joints made by flame welding
- E01B11/50 . . Joints made by electric welding
- E01B11/52 . . Joints made by alumino-thermal welding

- E01B11/54 . Electrically-insulating rail joints

- E01B11/56 . Special arrangements for supporting rail ends ([foot supports E01B11/08 to E01B11/14](#))
- E01B11/58 . . Bridge plates
- E01B11/60 . . . with wedges
- E01B11/62 . . Bridge chairs ([chairs E01B9/54 to E01B9/58](#))

- E01B13/00 Arrangements preventing shifting of the track**

- E01B13/02 . Rail anchors

- E01B15/00 Guards for preventing a person`s foot being trapped in grooved rails**

- E01B17/00 Cattle guards connected to the permanent way ([grids in general for preventing cattle from straying A01K3/00](#))**

- E01B19/00 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 E01F7/02, snow-ploughs E01H8/02, watering E01H11/00](#))**

- E01B19/00A . [\[N: Means for reducing the development or propagation of noise\] \[N9909\]](#)
- E01B19/00B . [\[N: Means for protecting the underground against spillage\] \[N9909\]](#)

- E01B21/00 Track superstructure adapted for tramways in paved streets ([paving E01C9/04, E01C9/06](#))**

- E01B21/02 . Special supporting means; Draining of rails
- E01B21/04 . Special fastenings, joint constructions, or tie-rods
- E01B23/00** **Easily dismantlable or movable tracks, e.g. temporary railways; Details specially adapted therefor**
- E01B23/02 . Tracks for light railways, e.g. for field, colliery, or mine use
- E01B23/04 . . Fastening or joining means
- E01B23/06 . . Switches ([turntables B60S, B61J](#)); Portable switches; Turnouts
- E01B23/08 . Temporary tracks for use while repairing tramways
- E01B23/10 . Shiftable tracks for heavy loads, e.g. carrying excavators
- E01B23/12 . . Sleepers
- E01B23/14 . . Fastening or joining means ([fastening of rails by keys E01B9/24](#))
- E01B23/16 . . Switches
- E01B25/00** **Tracks for special kinds of railways ([systems B61B](#); [wheel tracks on roads E01C9/02](#))**
- E01B25/02 . Tracks for rack railways
- E01B25/04 . . Rack rails; Supports or connections for rack rails
- E01B25/06 . . Switches; Frogs; Crossings
- E01B25/08 . Tracks for mono-rails with centre of gravity of vehicle above the load-bearing rail
- E01B25/10 . . Mono-rails; Auxiliary balancing rails; Supports or connections for rails
- E01B25/12 . . Switches; Crossings
- E01B25/14 . Tracks for cable-drawn railway vehicles
- E01B25/15 . . Switches; Crossings
- E01B25/16 . Tracks for aerial rope railways with a stationary rope
- E01B25/18 . . Ropers; Supports, fastening or straining means for ropes ([ropes in general D07B](#); [masts E04H12/00](#); [ropes sockets F16G](#))
- E01B25/20 . . Switches; Crossings
- E01B25/22 . Tracks for railways with the vehicle suspended from rigid supporting rails
- E01B25/24 . . Supporting rails; Auxiliary balancing rails; Supports or connections for rails
- E01B25/26 . . Switches; Crossings
- E01B25/28 . Rail tracks for guiding vehicles when running on road or similar surface ([wheel tracks on roads E01C9/02](#))
- E01B25/30 . Tracks for magnetic suspension or levitation vehicles [[N0304](#)]
- E01B25/30B . . [[N: Rails or supporting constructions](#)] [[N0304](#)]
- E01B25/32 . . Stators, guide rails or slide rails [[N0304](#)]

- E01B25/34 . . . Switches; Frogs; Crossings [N0304]
- E01B26/00** **Tracks or track components not covered by any one of the preceding groups**
- E01B26/00A . [N: Means for fixing posts, barriers, fences or the like to rails] [N9912]
- Guide heading:** **Making, maintaining, renewing, or taking-up the ballastway or the track; Tools or machines specially designed therefor (derailing or rerailling of machines B61K5/00; removal of foreign matter from the permanent way, vegetation control applying liquids E01H)**
- E01B27/00** **Placing, renewing, working, cleaning, or taking-up the ballast, with or without concurrent work on the track; Devices therefor; Packing sleepers**
- E01B27/02 . Placing the ballast; Making ballastway; Redistributing ballasting material; Machines or devices therefor; Levelling means
- E01B27/02B . . [N: by devices moving underneath the track, e.g. ballast sleighs]
- E01B27/02C . . [N: by devices moving on the track with or without spreading or levelling]
- E01B27/02D . . [N: Spreading, levelling or redistributing ballast already placed]
- E01B27/02D2 . . . [N: by means of non-driven tools]
- E01B27/02D3 . . . [N: by means of driven tools, e.g. rotating brooms or digging devices]
- E01B27/02F . . [N: Loosening ballasting material]
- E01B27/02G . . [N: Compacting ballasting material; Performing ballast cores or seats for sleepers]
- E01B27/04 . Removing the ballast; Machines therefor, whether or not additionally adapted for taking-up ballast ([E01B27/06](#), [E01B27/12](#) takes precedence; redistributing ballasting material [E01B27/02](#))
- E01B27/06 . Renewing or cleaning the ballast in situ, with or without concurrent work on the track
- E01B27/08 . . the track having been taken-up ([E01B27/11](#) takes precedence)
- E01B27/10 . . without taking-up track ([E01B27/11](#) takes precedence)
- E01B27/10B . . . [N: Removing unwanted material without removing the ballast]
- E01B27/10C . . . [N: the track having been lifted]
- E01B27/10D . . . [N: along between the tracks only]
- E01B27/11 . . combined with concurrent renewal of track components
- E01B27/12 . Packing sleepers, with or without concurrent work on the track; Compacting track-carrying ballast
- E01B27/13 . . Packing sleepers, with or without concurrent work on the track ([performing ballast cores or seats for sleepers E01B27/02](#))
- E01B27/14 . . . Manual tools or hand-held power tools therefor
- E01B27/16 . . . Sleeper-tamping machines
- E01B27/17 combined with means for lifting, levelling or slewing the track
- E01B27/18 by introducing additional fresh material under the sleepers, e.g. by the measured-shovel method, by the blowing method
- E01B27/20 . . Compacting the material of the track-carrying ballastway, e.g. by vibrating the track, by surface vibrators ([of trackless ballastway E01B27/02](#); for packing sleepers

[E01B27/12\)](#)

- E01B29/00** **Laying, rebuilding, or taking-up tracks; Tools or machines therefor** ([E01B27/00](#), [E01B31/00](#) take precedence)
- [E01B29/00B](#) . [\[N: Making of concrete parts of the track in situ\]](#) [\[N0001\]](#)
- [E01B29/02](#) . Transporting, laying, removing, or renewing lengths of assembled track, assembled switches, or assembled crossings ([E01B29/04](#) takes precedence)
- [E01B29/04](#) . Lifting or levelling of tracks ([lifting devices in general](#) [B66F](#))
- [E01B29/05](#) . Transporting, laying, removing, or renewing both rails and sleepers ([as assembled units](#) [E01B29/02](#))
- [E01B29/06](#) . Transporting, laying, removing or renewing sleepers ([E01B29/05](#) takes precedence; [carrying devices](#) [B65G7/12](#))
- [E01B29/09](#) . . under, or from under, installed rails
- [E01B29/10](#) . . . for inserting or removing sleepers
- [E01B29/11](#) Removal involving destruction of the sleeper, e.g. the sectioning thereof
- [E01B29/13](#) . . . for moving sleepers in a direction parallel to the rails, e.g. for spacing or aligning them ([E01B29/10](#) takes precedence)
- [E01B29/14](#) . . . for lifting sleepers up to the rails ([lifting devices in general](#) [B66F](#))
- [E01B29/16](#) . Transporting, laying, removing, or replacing rails; Moving rails placed on sleepers in the track ([E01B29/05](#) takes precedence; [moving or tilting heavy loads in general](#) [B65G7/00](#))
- [E01B29/17](#) . . Lengths of rails assembled into strings, e.g. welded together
- [E01B29/20](#) . . Moving rails placed on installed sleepers in the plane track
- [E01B29/22](#) . . Raising rails from sleepers, e.g. for inserting sole-plates ([lifting devices in general](#) [B66F](#))
- [E01B29/24](#) . Fixing or removing detachable fastening means or accessories thereof; Pre-assembling track components by detachable fastening means ([E01B29/02](#), [E01B31/26](#) take precedence)
- [E01B29/26](#) . . the fastening means being spikes ([E01B29/16](#) takes precedence; [hand-held tools for nail or staple driving or extracting](#) [B25C](#))
- [E01B29/28](#) . . 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
- [E01B29/29](#) . . . for horizontally-arranged fastening elements, e.g. fish-bolts
- [E01B29/32](#) . Installing or removing track components, not covered by the preceding groups, e.g. sole-plates, rail anchors ([E01B31/26](#) takes precedence)
- [E01B29/40](#) . Means or arrangements for temporarily supporting laid tracks, or rails or sleepers in the track ([temporary fishplates](#) [E01B11/18](#))
- [E01B29/42](#) . 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 ([E01B31/26](#) takes precedence; [independent heating means](#) [E01B31/18](#); [welding in general](#) [B23K](#); [gluing metal parts in general](#) [F16B11/00](#))

- E01B29/44 . . Methods for effecting joining of rails in the track, e.g. taking account of ambient temperature
- E01B29/46 . . Devices for holding, positioning, or urging together the rail ends ([adjusting the joint by moving rails E01B29/20](#))

- E01B31/00** **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](#))

- E01B31/02 . Working rail or other metal track components on the spot
- E01B31/04 . . Sectioning or slitting, e.g. by sawing, shearing, flame-cutting
- E01B31/06 . . Making holes, e.g. by drilling, punching, flame-cutting
- E01B31/08 . . Bending, e.g. for straightening rails or rail joints ([for aligning rail ends to be welded E01B29/46](#))
- E01B31/12 . . Removing metal from rails, rail joints, or baseplates, e.g. for deburring welds, reconditioning worn rails
 - E01B31/13 . . . by milling
 - E01B31/15 . . . by planing or filing
 - E01B31/17 . . . by grinding
 - E01B31/17B [N: [using grinding belts](#)]
- E01B31/18 . . Reconditioning or repairing worn or damaged parts on the spot, e.g. applying inlays, building-up rails by welding ([E01B31/04 to E01B31/12 take precedence](#)); Heating or cooling of parts on the spot, e.g. for reducing joint gaps, for hardening rails

- E01B31/20 . Working or treating non-metal sleepers in or on the line, e.g. marking, creosoting ([working metal sleepers E01B31/02](#))
- E01B31/22 . . Cutting or grinding wooden sleepers, e.g. for forming rail seats ([E01B31/24 takes precedence](#))
- E01B31/23 . . . Sectioning ([combined with removal of segments from track E01B29/11](#))
- E01B31/24 . . Forming, treating, reconditioning, or cleaning holes in sleepers; Drilling-templates ([E01B29/28, E01B31/26 take precedence](#))
- E01B31/26 . . Inserting or removing inserts or fillings for holes in sleepers, e.g. plugs, sleeves
- E01B31/28 . . Applying or removing anti-splitting or like reinforcing means ([E01B31/26 takes precedence](#); [straps or bands therefor E01B3/08](#)) [C9810]

- E01B33/00** **Machines or devices for shifting tracks, with or without lifting, e.g. for aligning track, for shifting excavator track (combined with sleeper packing machines E01B27/17)** [C0709]

- E01B33/02 . for slewing, i.e. transversely shifting, in steps
- E01B33/04 . . Manual tools; Devices not mounted on vehicles

- E01B33/06 . for slewing in a continuous operation, e.g. for tracks which carry excavators
- E01B33/08 . . Boom track-slewing machines
- E01B33/10 . . Bridge track-slewing machines
- E01B33/12 . . Combined boom and bridge track-slewing machines
- E01B33/18 . . Details not peculiar to a particular type of machine

E01B33/21 . . . Arrangement or construction of rollers moving the rails

E01B35/00 **Applications of measuring apparatus or devices for track-building purposes**
(apparatus on locomotives or cars to indicate or record bad track sections [B61K9/00](#);
measuring angles, linear dimensions, or irregularities in general [G01B](#), [G01C](#))

E01B35/02 . for spacing, for cross levelling; for laying-out curves

E01B35/04 . . Wheeled apparatus

E01B35/06 . for measuring irregularities in longitudinal direction

E01B35/08 . . for levelling

E01B35/10 . . for aligning

E01B35/12 . for measuring movement of the track or of the components thereof under rolling loads,
e.g. depression of sleepers, increase of gauge

E01B37/00 **Making, maintaining, renewing, or taking-up the ballastway or the track, not
provided for in a single one of groups [E01B27/00](#) to [E01B35/00](#)**