

SECTION E — FIXED CONSTRUCTIONS

E01 CONSTRUCTION OF ROADS, RAILWAYS, OR BRIDGES

E01B PERMANENT WAY; PERMANENT-WAY TOOLS; MACHINES FOR MAKING RAILWAYS OF ALL KINDS (derailing or rerailing blocks on track, track brakes or retarders B61K; removal of foreign matter from the permanent way, vegetation control, applying liquids E01H)

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STRUCTURE OF THE PERMANENT WAY

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Structure of the permanent way for railways or tramways

- 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) **[1, 2006.01]**
- 2/00 General structure of permanent way** (railway networks B61B 1/00; foundations for pavings E01C 3/00; foundations in general E02D) **[1, 2006.01]**
- 3/00 Transverse or longitudinal sleepers** (for switches or crossings E01B 7/22); **Other means resting directly on the ballastway for supporting rails** **[1, 2006.01]**
- 3/02 • made from wood (drying or impregnating B27K) **[1, 2006.01]**
- 3/04 • • Means for preventing cleaving **[1, 2006.01]**
- 3/06 • • • Anti-cracking dogs **[1, 2006.01]**
- 3/08 • • • Straps or bands for hooping or encircling sleepers (apparatus for hooping wooden railway sleepers on the spot E01B 31/28) **[1, 2006.01]**
- 3/10 • • Composite sleepers **[1, 2006.01]**
- 3/12 • • Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers **[1, 2006.01]**
- 3/14 • • Slabs; Blocks; Fastening tie-rods to them **[1, 2006.01]**
- 3/16 • made from steel **[1, 2006.01]**
- 3/18 • • Composite sleepers **[1, 2006.01]**
- 3/20 • • Sleeper construction for special purposes, e.g. with openings for ballast working (sleepers for shiftable track for heavy loads E01B 23/12) **[1, 2006.01]**
- 3/22 • • Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers **[1, 2006.01]**
- 3/24 • • Slabs; Blocks; Pot sleepers; Fastening tie-rods to them **[1, 2006.01]**
- 3/26 • • combined with inserts of wood, artificial stone, or other material **[1, 2006.01]**
- 3/28 • made from concrete or from natural or artificial stone (manufacture B28) **[1, 2006.01]**

- 3/30 • • Hollow sleepers **[1, 2006.01]**
- 3/32 • • with armouring or reinforcement (hollow sleepers E01B 3/30) **[1, 2006.01]**
- 3/34 • • • with pre-tensioned armouring or reinforcement (pre-tensioned armouring or reinforcing elements E04C 5/00) **[1, 2006.01]**
- 3/36 • • Composite sleepers **[1, 2006.01]**
- 3/38 • • Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers; Layers of concrete supporting both rails **[1, 2006.01]**
- 3/40 • • Slabs; Blocks; Pot sleepers; Fastening tie-rods to them **[1, 2006.01]**
- 3/42 • • combined with inserts of wood or other material **[1, 2006.01]**
- 3/44 • made from other materials only if the material is essential **[1, 2006.01]**
- 3/46 • made from different materials (E01B 3/26, E01B 3/42 take precedence) **[1, 2006.01]**
- 3/48 • Distance keepers or tie-rods for sleepers **[1, 2006.01]**
- 5/00 Rails; Guard rails** (manufacture of rails B21B); **Distance-keeping means for them** **[1, 2006.01]**
- 5/02 • Rails **[1, 2006.01]**
- 5/04 • • Grooved rails **[1, 2006.01]**
- 5/06 • • Reversible or invertible rails **[1, 2006.01]**
- 5/08 • • Composite rails; Compound rails with dismountable or non-dismountable parts **[1, 2006.01]**
- 5/10 • • • Composite grooved rails; Inserts for grooved rails **[1, 2006.01]**
- 5/12 • • Rails with a foot serving as a sleeper **[1, 2006.01]**
- 5/14 • • Rails for special parts of the track, e.g. for curves **[1, 2006.01]**
- 5/16 • Distance keepers **[1, 2006.01]**
- 5/18 • Guard rails; Connecting, fastening or adjusting means therefor **[1, 2006.01]**

- 7/00 Switches; Crossings** (operating mechanisms B61L) [1, 2006.01]
- 7/02 • Tongues; Associated constructions [1, 2006.01]
- 7/04 • • Constructions with tongues turning about a vertical pivot at the end [1, 2006.01]
- 7/06 • • Constructions with flexible tongues or flexible fishplates [1, 2006.01]
- 7/08 • • Other constructions of tongues, e.g. tilting about an axis parallel to the rail, movable tongue blocks or rails [1, 2006.01]
- 7/10 • Frogs [1, 2006.01]
- 7/12 • • Fixed frogs made of one part or composite [1, 2006.01]
- 7/14 • • with movable parts [1, 2006.01]
- 7/16 • • Jump-over frogs [1, 2006.01]
- 7/18 • Combinations of switches and crossings [1, 2006.01]
- 7/20 • Safety means for switches, e.g. switch point protectors, auxiliary or guiding rail members [1, 2006.01]
- 7/22 • Special sleepers for switches or crossings; Fastening means therefor [1, 2006.01]
- 7/24 • Heating of switches [1, 2006.01]
- 7/26 • Lubricating of switches (lubricating of rails B61K 3/00) [1, 2006.01]
- 7/28 • Crossings [1, 2006.01]
- 7/30 • • Jump-over crossings [1, 2006.01]
- 9/00 Fastening rails on sleepers, or the like** (fastening rails to bridges E01D 19/12) [1, 2006.01]
- 9/02 • Fastening rails, tie-plates, or chairs directly on sleepers or foundations; Means therefor [1, 2006.01]
- 9/04 • • Fastening on wooden or concrete sleepers or on masonry without clamp members [1, 2006.01]
- 9/06 • • • Railways spikes (nails in general F16B) [1, 2006.01]
- 9/08 • • • Elastic spikes [1, 2006.01]
- 9/10 • • • Screws or bolts for sleepers (screws or bolts in general F16B) [1, 2006.01]
- 9/12 • • • Retaining or locking devices for spikes or screws [1, 2006.01]
- 9/14 • • • Plugs, sleeves, thread linings, or other inserts for holes in sleepers (inserting plugs or sleeves E01B 31/26) [1, 2006.01]
- 9/16 • • • • for wooden sleepers [1, 2006.01]
- 9/18 • • • • for concrete sleepers [1, 2006.01]
- 9/20 • • • by keys [1, 2006.01]
- 9/22 • • Fastening on steel sleepers without clamp members [1, 2006.01]
- 9/24 • • • by keys [1, 2006.01]
- 9/26 • • • Welded fastenings [1, 2006.01]
- 9/28 • • Fastening on wooden or concrete sleepers or on masonry with clamp members [1, 2006.01]
- 9/30 • • • by resilient steel clips [1, 2006.01]
- 9/32 • • Fastening on steel sleepers with clamp members [1, 2006.01]
- 9/34 • • • by resilient steel clips [1, 2006.01]
- 9/36 • • Metal sole-plates for rails which rails are directly fastened to sleepers [1, 2006.01]
- 9/38 • Indirect fastening of rails by using tie-plates or chairs; Fastening of rails on the tie-plates or in the chairs [1, 2006.01]
- 9/40 • • Tie-plates for flat-bottom rails (manufacture thereof B21) [1, 2006.01]
- 9/42 • • • of two or more parts [1, 2006.01]
- 9/44 • • Fastening the rail on the tie-plate [1, 2006.01]
- 9/46 • • • by clamps [1, 2006.01]
- 9/48 • • • • by resilient steel clips [1, 2006.01]
- 9/50 • • • by keys [1, 2006.01]
- 9/52 • • • • by resilient keys [1, 2006.01]
- 9/54 • • Rail chairs [1, 2006.01]
- 9/56 • • • for rails with two or more treads [1, 2006.01]
- 9/58 • • Fastening the rail in the chair [1, 2006.01]
- 9/60 • Rail fastenings making use of clamps or braces supporting the side or head of the rail [1, 2006.01]
- 9/62 • Rail fastenings incorporating resilient supports [1, 2006.01]
- 9/64 • Rail fastenings gripping or encircling the sleeper [1, 2006.01]
- 9/66 • Rail fastenings allowing the adjustment of the position of the rails, so far as not covered by the preceding groups [1, 2006.01]
- 9/68 • Pads or the like, e.g. of wood, rubber, placed under the rail, tie-plate, or chair [1, 2006.01]
- 11/00 Rail joints** (electrical connection of rails B60M 5/00) [1, 2006.01]
- 11/02 • Dismountable rail joints [1, 2006.01]
- 11/04 • • Flat fishplates [1, 2006.01]
- 11/06 • • • with keys or pins [1, 2006.01]
- 11/08 • • Angle fishplates [1, 2006.01]
- 11/10 • • Fishplates with parts supporting or surrounding the rail foot [1, 2006.01]
- 11/12 • • Fishplates engaging only the rail foot [1, 2006.01]
- 11/14 • • Rail foot flange clips in one piece [1, 2006.01]
- 11/16 • • Fishplates for joining rails of different sections [1, 2006.01]
- 11/18 • • Fishplates for temporarily repairing broken rails [1, 2006.01]
- 11/20 • • with gap-bridging [1, 2006.01]
- 11/22 • • • by parts of the rails [1, 2006.01]
- 11/24 • • • • with oblique or overlapping rail ends [1, 2006.01]
- 11/26 • • • • with interlocking rail ends [1, 2006.01]
- 11/28 • • • by parts of the joining members [1, 2006.01]
- 11/30 • • • • Fishplates with integral tread parts lying in the cross-section of the rail head [1, 2006.01]
- 11/32 • • • by separate parts; Inserts bridging both rail heads [1, 2006.01]
- 11/34 • • • • Auxiliary rail beside the gap [1, 2006.01]
- 11/36 • • Fastening means for fishplates [1, 2006.01]
- 11/38 • • • Locking arrangements for fastening means (locking means for nuts or bolts in general F16B) [1, 2006.01]
- 11/40 • • Dismountable rail joints combined with welded parts [1, 2006.01]
- 11/42 • Joint constructions for relatively movable rails, e.g. rails on turntables, traversers, or swing bridges [1, 2006.01]
- 11/44 • Non-dismountable rail joints; Welded joints (welding methods B23K) [1, 2006.01]
- 11/46 • • General methods for making gapless tracks [1, 2006.01]
- 11/48 • • Joints made by flame welding [1, 2006.01]
- 11/50 • • Joints made by electric welding [1, 2006.01]
- 11/52 • • Joints made by alumino-thermal welding [1, 2006.01]
- 11/54 • Electrically-insulating rail joints [1, 2006.01]
- 11/56 • Special arrangements for supporting rail ends (foot supports E01B 11/08-E01B 11/14) [1, 2006.01]
- 11/58 • • Bridge plates [1, 2006.01]
- 11/60 • • • with wedges [1, 2006.01]

- 11/62 • • Bridge chairs (chairs E01B 9/54-E01B 9/58) [1, 2006.01]
- 13/00 **Arrangements preventing shifting of the track** [1, 2006.01]
- 13/02 • Rail anchors [1, 2006.01]
- 15/00 **Guards for preventing a person's foot being trapped in grooved rails** [1, 2006.01]
- 17/00 **Cattle guards connected to the permanent way** (grids in general for preventing cattle from straying A01K 3/00) [1, 2006.01]
- 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) [1, 2006.01]
- 21/00 **Track superstructure specially adapted for tramways in paved streets** (paving E01C 9/04, E01C 9/06) [1, 2006.01]
- 21/02 • Special supporting means; Draining of rails [1, 2006.01]
- 21/04 • Special fastenings, joint constructions, or tie-rods [1, 2006.01]
- 23/00 **Easily dismountable or movable tracks, e.g. temporary railways; Details specially adapted therefor** [1, 2006.01]
- 23/02 • Tracks for light railways, e.g. for field, colliery, or mine use [1, 2006.01]
- 23/04 • • Fastening or joining means [1, 2006.01]
- 23/06 • • Switches (turntables B60S, B61J); Portable switches; Turnouts [1, 2006.01]
- 23/08 • Temporary tracks for use while repairing tramways [1, 2006.01]
- 23/10 • Shiftable tracks for heavy loads, e.g. carrying excavators [1, 2006.01]
- 23/12 • • Sleepers [1, 2006.01]
- 23/14 • • Fastening or joining means (fastening of rails by keys E01B 9/24) [1, 2006.01]
- 23/16 • • Switches [1, 2006.01]
- 25/00 **Tracks for special kinds of railways** (systems B61B; wheel tracks on roads E01C 9/02) [1, 2006.01]
- Note(s)**
In this group, the following term is used with the meaning indicated:
- "track" includes non-load-carrying guide rails.
- 25/02 • Tracks for rack railways [1, 2006.01]
- 25/04 • • Rack rails; Supports or connections for rack rails [1, 2006.01]
- 25/06 • • Switches; Frogs; Crossings [1, 2006.01]
- 25/08 • Tracks for mono-rails with centre of gravity of vehicle above the load-bearing rail (E01B 25/30 takes precedence) [1, 7, 2006.01]
- 25/10 • • Mono-rails; Auxiliary balancing rails; Supports or connections for rails [1, 2006.01]
- 25/12 • • Switches; Crossings [1, 2006.01]
- 25/14 • Tracks for cable-drawn railway vehicles [1, 2006.01]
- 25/15 • • Switches; Crossings [1, 2006.01]
- 25/16 • Tracks for aerial rope railways with a stationary rope [1, 2006.01]
- 25/18 • • Ropes; Supports, fastening or straining means for ropes (ropes in general D07B; masts E04H 12/00; rope sockets F16G) [1, 2006.01]
- 25/20 • • Switches; Crossings [1, 2006.01]
- 25/22 • Tracks for railways with the vehicle suspended from rigid supporting rails [1, 2006.01]
- 25/24 • • Supporting rails; Auxiliary balancing rails; Supports or connections for rails [1, 2006.01]
- 25/26 • • Switches; Crossings [1, 2006.01]
- 25/28 • Rail tracks for guiding vehicles when running on road or similar surface (wheel tracks on roads E01C 9/02) [1, 2006.01]
- 25/30 • Tracks for magnetic suspension or levitation vehicles [7, 2006.01]
- 25/32 • • Stators, guide rails or slide rails [7, 2006.01]
- 25/34 • • Switches; Frogs; Crossings [7, 2006.01]
- 26/00 **Tracks or track components not covered by any one of main groups E01B 1/00-E01B 25/00** [1, 2006.01]
- Making, maintaining, renewing, or taking-up the ballastway or the track; Tools or machines specially designed therefor**
- 27/00 **Placing, renewing, working, cleaning, or taking-up the ballast, with or without concurrent work on the track; Devices therefor; Packing sleepers** [1, 2006.01]
- 27/02 • Placing the ballast; Making the ballastway; Redistributing ballasting material; Machines or devices therefor; Levelling means [1, 2006.01]
- 27/04 • Removing the ballast; Machines therefor, whether or not additionally adapted for taking-up ballast (E01B 27/06, E01B 27/12 take precedence; redistributing ballasting material E01B 27/02) [1, 2006.01]
- 27/06 • Renewing or cleaning the ballast *in situ*, with or without concurrent work on the track [1, 2006.01]
- 27/08 • • the track having been taken-up (E01B 27/11 takes precedence) [1, 2006.01]
- 27/10 • • without taking-up the track (E01B 27/11 takes precedence) [1, 2006.01]
- 27/11 • • combined with concurrent renewal of track components [1, 2006.01]
- 27/12 • Packing sleepers, with or without concurrent work on the track; Compacting track-carrying ballast [1, 2006.01]
- 27/13 • • Packing sleepers, with or without concurrent work on the track (preforming ballast cores or seats for sleepers E01B 27/02) [1, 2006.01]
- 27/14 • • • Manual tools or hand-held power tools therefor [1, 2006.01]
- 27/16 • • • Machines therefor, e.g. so-called sleeper-tamping machines [1, 2006.01]
- 27/17 • • • • combined with means for lifting, levelling, or slewing the track [1, 2006.01]
- 27/18 • • • by introducing additional fresh material under the sleepers, e.g. by the measured-shovel method, by the blowing method [1, 2006.01]
- 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) [1, 2006.01]
- 29/00 **Laying, rebuilding, or taking-up tracks; Tools or machines therefor** (E01B 27/00, E01B 31/00 take precedence) [1, 2006.01]

E01B

- 29/02 • Transporting, laying, removing, or renewing lengths of assembled track, assembled switches, or assembled crossings (E01B 29/04 takes precedence) **[1, 2006.01]**
- 29/04 • Lifting or levelling of tracks (lifting devices in general B66F) **[1, 2006.01]**
- 29/05 • Transporting, laying, removing, or renewing both rails and sleepers (as assembled units E01B 29/02) **[1, 2006.01]**
- 29/06 • Transporting, laying, removing, or renewing sleepers (E01B 29/05 takes precedence; carrying devices B65G 7/12) **[1, 2006.01]**
- 29/09 • • under, or from under, installed rails **[1, 2006.01]**
- 29/10 • • • for inserting or removing sleepers **[1, 2006.01]**
- 29/11 • • • • Removal involving destruction of the sleeper, e.g. the sectioning thereof **[1, 2006.01]**
- 29/13 • • • for moving sleepers in a direction parallel to the rails, e.g. for spacing or aligning them (E01B 29/10 takes precedence) **[1, 2006.01]**
- 29/14 • • • for lifting sleepers up to the rails (lifting devices in general B66F) **[1, 2006.01]**
- 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) **[1, 2006.01]**
- 29/17 • • Lengths of rails assembled into strings, e.g. welded together **[1, 2006.01]**
- 29/20 • • Moving rails placed on installed sleepers in the plane of the track **[1, 2006.01]**
- 29/22 • • Raising rails from sleepers, e.g. for inserting sole-plates (lifting devices in general B66F) **[1, 2006.01]**
- 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) **[1, 2006.01]**
- 29/26 • • the fastening means being spikes (E01B 29/16 takes precedence; hand-held tools for nail or staple driving or extracting B25C) **[1, 2006.01]**
- 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 **[1, 2006.01]**
- 29/29 • • • for horizontally-arranged fastening elements, e.g. fish-bolts **[1, 2006.01]**
- 29/32 • Installing or removing track components, not covered by the preceding groups, e.g. sole-plates, rail anchors (E01B 31/26 takes precedence) **[1, 2006.01]**
- 29/40 • Means or arrangements for temporarily supporting laid tracks, or rails or sleepers in the track (temporary fishplates E01B 11/18) **[1, 2006.01]**
- 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) **[1, 2006.01]**
- 29/44 • • Methods for effecting joining of rails in the track, e.g. taking account of ambient temperature **[1, 2006.01]**
- 29/46 • • Devices for holding, positioning, or urging together the rail ends (adjusting the joint by moving rails E01B 29/20) **[1, 2006.01]**
- 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-B25, B27) **[1, 2006.01]**
- 31/02 • Working rail or other metal track components on the spot **[1, 2006.01]**
- 31/04 • • Sectioning or slitting, e.g. by sawing, shearing, flame-cutting **[1, 2006.01]**
- 31/06 • • Making holes, e.g. by drilling, punching, flame-cutting **[1, 2006.01]**
- 31/08 • • Bending, e.g. for straightening rails or rail joints (for aligning rail ends to be welded E01B 29/46) **[1, 2006.01]**
- 31/12 • • Removing metal from rails, rail joints, or baseplates, e.g. for deburring welds, reconditioning worn rails **[1, 2006.01]**
- 31/13 • • • by milling **[1, 2006.01]**
- 31/15 • • • by planing or filing **[1, 2006.01]**
- 31/17 • • • by grinding **[1, 2006.01]**
- 31/18 • • Reconditioning or repairing worn or damaged parts on the spot, e.g. applying inlays, building-up rails by welding (E01B 31/04-E01B 31/12 take precedence); Heating or cooling of parts on the spot, e.g. for reducing joint gaps, for hardening rails **[1, 2006.01]**
- 31/20 • Working or treating non-metal sleepers in or on the line, e.g. marking, creosoting (working metal sleepers E01B 31/02) **[1, 2006.01]**
- 31/22 • • Cutting or grinding wooden sleepers, e.g. for forming rail seats (E01B 31/24 takes precedence) **[1, 2006.01]**
- 31/23 • • • Sectioning (combined with removal of segments from track E01B 29/11) **[1, 2006.01]**
- 31/24 • • Forming, treating, reconditioning, or cleaning holes in sleepers; Drilling-templates (E01B 29/28, E01B 31/26 take precedence) **[1, 2006.01]**
- 31/26 • • Inserting or removing inserts or fillings for holes in sleepers, e.g. plugs, sleeves **[1, 2006.01]**
- 31/28 • • Applying or removing anti-splitting or like reinforcing means (E01B 31/26 takes precedence; straps or bands therefor E01B 3/08) **[1, 2006.01]**
- 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) **[1, 2006.01]**
- 33/02 • for slewing, i.e. transversely shifting, in steps **[1, 2006.01]**
- 33/04 • • Manual tools; Devices not mounted on vehicles **[1, 2006.01]**
- 33/06 • for slewing in a continuous operation, e.g. for tracks which carry excavators **[1, 2006.01]**
- 33/08 • • Boom track-slewing machines **[1, 2006.01]**
- 33/10 • • Bridge track-slewing machines **[1, 2006.01]**
- 33/12 • • Combined boom and bridge track-slewing machines **[1, 2006.01]**
- 33/18 • • Details not peculiar to a particular type of machine **[1, 2006.01]**
- 33/21 • • • Arrangement or construction of rollers moving the rails **[1, 2006.01]**
- 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) **[1, 2006.01]**

- 35/02 • for spacing; for cross levelling; for laying-out curves [1, 2006.01]
- 35/04 • • Wheeled apparatus [1, 2006.01]
- 35/06 • for measuring irregularities in longitudinal direction [1, 2006.01]
- 35/08 • • for levelling [1, 2006.01]
- 35/10 • • for aligning [1, 2006.01]

- 35/12 • for measuring movement of the track or of components thereof under rolling loads, e.g. depression of sleepers, increase of gauge [1, 2006.01]
- 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-E01B 35/00 [1, 2006.01]**