

SECTION E – FIXED CONSTRUCTIONS

E01 CONSTRUCTION OF ROADS, RAILWAYS, OR BRIDGES (of tunnels E21D)

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

General structure.....	2/00
Ballastway, transverse or longitudinal sleepers	1/00, 3/00
Rails or switches for general application.....	5/00 13/00, 26/00

Rails or switches for particular application	21/00 26/00
Protective arrangements	15/00 19/00

MAKING, MAINTAINING, RENEWING, OR TAKING-UP THE BALLASTWAY OR THE TRACK.....	27/00 37/00
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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)
2/00	General structure of permanent way (railway networks B61B 1/00; foundations for pavings E01C 3/00; foundations in general E02D)
3/00	Transverse or longitudinal sleepers (for switches or crossings E01B 7/22); Other means resting directly on the ballastway for supporting rails
3/02	. made from wood (drying or impregnating B27K)
3/04	. . Means for preventing cleaving
3/06	. . . Anti-cracking dogs
3/08	. . . Straps or bands for hooping or encircling sleepers (apparatus for hooping wooden railway sleepers on the spot E01B 31/28)
3/10	. . Composite sleepers
3/12	. . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers
3/14	. . Slabs; Blocks; Fastening tie-rods to them
3/16	. made from steel
3/18	. . Composite sleepers
3/20	. . Sleeper construction for special purposes, e.g. with openings for ballast working (sleepers for shiftable track for heavy loads E01B 23/12)
3/22	. . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers
3/24	. . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
3/26	. . combined with inserts of wood, artificial stone, or other material
3/28	. made from concrete or from natural or artificial stone (manufacture B28)
3/30	. . Hollow sleepers
3/32	. . with armouring or reinforcement (hollow sleepers E01B 3/30)
3/34	. . . with pre-tensioned armouring or reinforcement (pre-tensioned armouring or reinforcing elements E04C 5/00)
3/36	. . Composite sleepers

3/38	. . Longitudinal sleepers; Longitudinal sleepers integral or combined with tie-rods; Combined longitudinal and transverse sleepers; Layers of concrete supporting both rails
3/40	. . Slabs; Blocks; Pot sleepers; Fastening tie-rods to them
3/42	. . combined with inserts of wood or other material
3/44	. made from other materials only if the material is essential
3/46	. made from different materials (E01B 3/26, E01B 3/42 take precedence)
3/48	. Distance keepers or tie-rods for sleepers
5/00	Rails; Guard rails (manufacture of rails B21B); Distance-keeping means for them
5/02	. Rails
5/04	. . Grooved rails
5/06	. . Reversible or invertible rails
5/08	. . Composite rails; Compound rails with dismountable or non-dismountable parts
5/10	. . . Composite grooved rails; Inserts for grooved rails
5/12	. . Rails with a foot serving as a sleeper
5/14	. . Rails for special parts of the track, e.g. for curves
5/16	. Distance keepers
5/18	. Guard rails; Connecting, fastening or adjusting means therefor
7/00	Switches; Crossings (operating mechanisms B61L)
7/02	. Tongues; Associated constructions
7/04	. . Constructions with tongues turning about a vertical pivot at the end
7/06	. . Constructions with flexible tongues or flexible fishplates
7/08	. . Other constructions of tongues, e.g. tilting about an axis parallel to the rail, movable tongue blocks or rails
7/10	. Frogs
7/12	. . Fixed frogs made of one part or composite
7/14	. . with movable parts
7/16	. . Jump-over frogs
7/18	. Combinations of switches and crossings
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
- 7/24 . Heating of switches
- 7/26 . Lubricating of switches (lubricating of rails B61K 3/00)
- 7/28 . Crossings
- 7/30 . . Jump-over crossings
- 9/00 Fastening rails on sleepers, or the like** (fastening rails to bridges E01D 19/12)
- 9/02 . Fastening rails, tie-plates, or chairs directly on sleepers or foundations; Means therefor
- 9/04 . . Fastening on wooden or concrete sleepers or on masonry without clamp members
- 9/06 . . . Railways spikes (nails in general F16B)
- 9/08 Elastic spikes
- 9/10 . . . Screws or bolts for sleepers (screws or bolts in general F16B)
- 9/12 . . . Retaining or locking devices for spikes or screws
- 9/14 . . . Plugs, sleeves, thread linings, or other inserts for holes in sleepers (inserting plugs or sleeves E01B 31/26)
- 9/16 for wooden sleepers
- 9/18 for concrete sleepers
- 9/20 . . . by keys
- 9/22 . . Fastening on steel sleepers without clamp members
- 9/24 . . . by keys
- 9/26 . . . Welded fastenings
- 9/28 . . Fastening on wooden or concrete sleepers or on masonry with clamp members
- 9/30 . . . by resilient steel clips
- 9/32 . . Fastening on steel sleepers with clamp members
- 9/34 . . . by resilient steel clips
- 9/36 . . Metal sole-plates for rails which rails are directly fastened to sleepers
- 9/38 . Indirect fastening of rails by using tie-plates or chairs; Fastening of rails on the tie-plates or in the chairs
- 9/40 . . Tie-plates for flat-bottom rails (manufacture thereof B21)
- 9/42 . . . of two or more parts
- 9/44 . . Fastening the rail on the tie-plate
- 9/46 . . . by clamps
- 9/48 by resilient steel clips
- 9/50 . . . by keys
- 9/52 by resilient keys
- 9/54 . . Rail chairs
- 9/56 . . . for rails with two or more treads
- 9/58 . . Fastening the rail in the chair
- 9/60 . Rail fastenings making use of clamps or braces supporting the side or head of the rail
- 9/62 . Rail fastenings incorporating resilient supports
- 9/64 . Rail fastenings gripping or encircling the sleeper
- 9/66 . Rail fastenings allowing the adjustment of the position of the rails, so far as not covered by the preceding groups
- 9/68 . Pads or the like, e.g. of wood, rubber, placed under the rail, tie-plate, or chair
- 11/00 Rail joints** (electrical connection of rails B60M 5/00)
- 11/02 . Dismountable rail joints
- 11/04 . . Flat fishplates
- 11/06 . . . with keys or pins
- 11/08 . . Angle fishplates
- 11/10 . . Fishplates with parts supporting or surrounding the rail foot
- 11/12 . . Fishplates engaging only the rail foot
- 11/14 . . Rail foot flange clips in one piece
- 11/16 . . Fishplates for joining rails of different sections
- 11/18 . . Fishplates for temporarily repairing broken rails
- 11/20 . . with gap-bridging
- 11/22 . . . by parts of the rails
- 11/24 with oblique or overlapping rail ends
- 11/26 with interlocking rail ends
- 11/28 . . . by parts of the joining members
- 11/30 Fishplates with integral tread parts lying in the cross-section of the rail head
- 11/32 . . . by separate parts; Inserts bridging both rail heads
- 11/34 Auxiliary rail beside the gap
- 11/36 . . Fastening means for fishplates
- 11/38 . . . Locking arrangements for fastening means (locking means for nuts or bolts in general F16B)
- 11/40 . . Dismountable rail joints combined with welded parts
- 11/42 . Joint constructions for relatively movable rails, e.g. rails on turntables, traversers, or swing bridges
- 11/44 . Non-dismountable rail joints; Welded joints (welding methods B23K)
- 11/46 . . General methods for making gapless tracks
- 11/48 . . Joints made by flame welding
- 11/50 . . Joints made by electric welding
- 11/52 . . Joints made by alumino-thermal welding
- 11/54 . Electrically-insulating rail joints
- 11/56 . Special arrangements for supporting rail ends (foot supports E01B 11/08 E01B 11/14)
- 11/58 . . Bridge plates
- 11/60 . . . with wedges
- 11/62 . . Bridge chairs (chairs E01B 9/54 E01B 9/58)
- 13/00 Arrangements preventing shifting of the track**
- 13/02 . Rail anchors
- 15/00 Guards for preventing a person's foot being trapped in grooved rails**
- 17/00 Cattle guards connected to the permanent way** (grids in general for preventing cattle from straying A01K 3/00)
- 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)
- 21/00 Track superstructure specially adapted for tramways in paved streets** (paving E01C 9/04, E01C 9/06)
- 21/02 . Special supporting means; Draining of rails
- 21/04 . Special fastenings, joint constructions, or tie-rods
- 23/00 Easily dismountable or movable tracks, e.g. temporary railways; Details specially adapted therefor**
- 23/02 . Tracks for light railways, e.g. for field, colliery, or mine use
- 23/04 . . Fastening or joining means
- 23/06 . . Switches (turntables B60S, B61J); Portable switches; Turnouts
- 23/08 . Temporary tracks for use while repairing tramways

- 23/10 . Shiftable tracks for heavy loads, e.g. carrying excavators
- 23/12 . . Sleepers
- 23/14 . . Fastening or joining means (fastening of rails by keys E01B 9/24)
- 23/16 . . Switches

25/00 Tracks for special kinds of railways (systems B61B; wheel tracks on roads E01C 9/02)

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
- 25/04 . . Rack rails; Supports or connections for rack rails
- 25/06 . . Switches; Frogs; Crossings
- 25/08 . Tracks for mono-rails with centre of gravity of vehicle above the load-bearing rail (E01B 25/30 takes precedence) [1,7]
- 25/10 . . Mono-rails; Auxiliary balancing rails; Supports or connections for rails
- 25/12 . . Switches; Crossings
- 25/14 . Tracks for cable-drawn railway vehicles
- 25/15 . . Switches; Crossings
- 25/16 . Tracks for aerial rope railways with a stationary rope
- 25/18 . . Ropes; Supports, fastening or straining means for ropes (ropes in general D07B; masts E04H 12/00; rope sockets F16G)
- 25/20 . . Switches; Crossings
- 25/22 . Tracks for railways with the vehicle suspended from rigid supporting rails
- 25/24 . . Supporting rails; Auxiliary balancing rails; Supports or connections for rails
- 25/26 . . Switches; Crossings
- 25/28 . Rail tracks for guiding vehicles when running on road or similar surface (wheel tracks on roads E01C 9/02)
- 25/30 . Tracks for magnetic suspension or levitation vehicles [7]
- 25/32 . . Stators, guide rails or slide rails [7]
- 25/34 . . Switches; Frogs; Crossings [7]

26/00 Tracks or track components not covered by any one of main groups E01B 1/00 E01B 25/00

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)

- 27/00 Placing, renewing, working, cleaning, or taking-up the ballast, with or without concurrent work on the track; Devices therefor; Packing sleepers**
- 27/02 . Placing the ballast; Making the ballastway; Redistributing ballasting material; Machines or devices therefor; Levelling means
- 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)
- 27/06 . Renewing or cleaning the ballast in situ, with or without concurrent work on the track
- 27/08 . . the track having been taken-up (E01B 27/11 takes precedence)

- 27/10 . . without taking-up the track (E01B 27/11 takes precedence)
- 27/11 . . combined with concurrent renewal of track components
- 27/12 . Packing sleepers, with or without concurrent work on the track; Compacting track-carrying ballast
- 27/13 . . Packing sleepers, with or without concurrent work on the track (performing ballast cores or seats for sleepers E01B 27/02)
- 27/14 . . . Manual tools or hand-held power tools therefor
- 27/16 . . . Machines therefor, e.g. so-called sleeper-tamping machines
- 27/17 combined with means for lifting, levelling, or slewing the track
- 27/18 . . . by introducing additional fresh material under the sleepers, e.g. by the measured-shovel method, by the blowing method
- 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)
- 29/00 Laying, rebuilding, or taking-up tracks; Tools or machines therefor** (E01B 27/00, E01B 31/00 take precedence)
- 29/02 . Transporting, laying, removing, or renewing lengths of assembled track, assembled switches, or assembled crossings (E01B 29/04 takes precedence)
- 29/04 . Lifting or levelling of tracks (lifting devices in general B66F)
- 29/05 . Transporting, laying, removing, or renewing both rails and sleepers (as assembled units E01B 29/02)
- 29/06 . Transporting, laying, removing, or renewing sleepers (E01B 29/05 takes precedence; carrying devices B65G 7/12)
- 29/09 . . under, or from under, installed rails
- 29/10 . . . for inserting or removing sleepers
- 29/11 Removal involving destruction of the sleeper, e.g. the sectioning thereof
- 29/13 . . . for moving sleepers in a direction parallel to the rails, e.g. for spacing or aligning them (E01B 29/10 takes precedence)
- 29/14 . . . for lifting sleepers up to the rails (lifting devices in general B66F)
- 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)
- 29/17 . . Lengths of rails assembled into strings, e.g. welded together
- 29/20 . . Moving rails placed on installed sleepers in the plane of the track
- 29/22 . . Raising rails from sleepers, e.g. for inserting sole-plates (lifting devices in general B66F)
- 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)
- 29/26 . . the fastening means being spikes (E01B 29/16 takes precedence; hand-held tools for nail or staple driving or extracting B25C)
- 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
- 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)
- 29/40 . Means or arrangements for temporarily supporting laid tracks, or rails or sleepers in the track (temporary fishplates E01B 11/18)
- 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)
- 29/44 . . Methods for effecting joining of rails in the track, e.g. taking account of ambient temperature
- 29/46 . . Devices for holding, positioning, or urging together the rail ends (adjusting the joint by moving rails E01B 29/20)
- 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)
 - 31/02 . Working rail or other metal track components on the spot
 - 31/04 . . Sectioning or slitting, e.g. by sawing, shearing, flame-cutting
 - 31/06 . . Making holes, e.g. by drilling, punching, flame-cutting
 - 31/08 . . Bending, e.g. for straightening rails or rail joints (for aligning rail ends to be welded E01B 29/46)
 - 31/12 . . Removing metal from rails, rail joints, or baseplates, e.g. for deburring welds, reconditioning worn rails
 - 31/13 . . . by milling
 - 31/15 . . . by planing or filing
 - 31/17 . . . by grinding
 - 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
 - 31/20 . Working or treating non-metal sleepers in or on the line, e.g. marking, creosoting (working metal sleepers E01B 31/02)
 - 31/22 . . Cutting or grinding wooden sleepers, e.g. for forming rail seats (E01B 31/24 takes precedence)
 - 31/23 . . . Sectioning (combined with removal of segments from track E01B 29/11)
 - 31/24 . . Forming, treating, reconditioning, or cleaning holes in sleepers; Drilling-templates (E01B 29/28, E01B 31/26 take precedence)
 - 31/26 . . Inserting or removing inserts or fillings for holes in sleepers, e.g. plugs, sleeves
 - 31/28 . . Applying or removing anti-splitting or like reinforcing means (E01B 31/26 takes precedence; straps or bands therefor E01B 3/08)
- 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)
 - 33/02 . for slewing, i.e. transversely shifting, in steps
 - 33/04 . . Manual tools; Devices not mounted on vehicles
 - 33/06 . for slewing in a continuous operation, e.g. for tracks which carry excavators
 - 33/08 . . Boom track-slewing machines
 - 33/10 . . Bridge track-slewing machines
 - 33/12 . . Combined boom and bridge track-slewing machines
 - 33/18 . . Details not peculiar to a particular type of machine
 - 33/21 . . . Arrangement or construction of rollers moving the rails
- 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)
 - 35/02 . for spacing; for cross levelling; for laying-out curves
 - 35/04 . . Wheeled apparatus
 - 35/06 . for measuring irregularities in longitudinal direction
 - 35/08 . . for levelling
 - 35/10 . . for aligning
 - 35/12 . for measuring movement of the track or of components thereof under rolling loads, e.g. depression of sleepers, increase of gauge
- 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**