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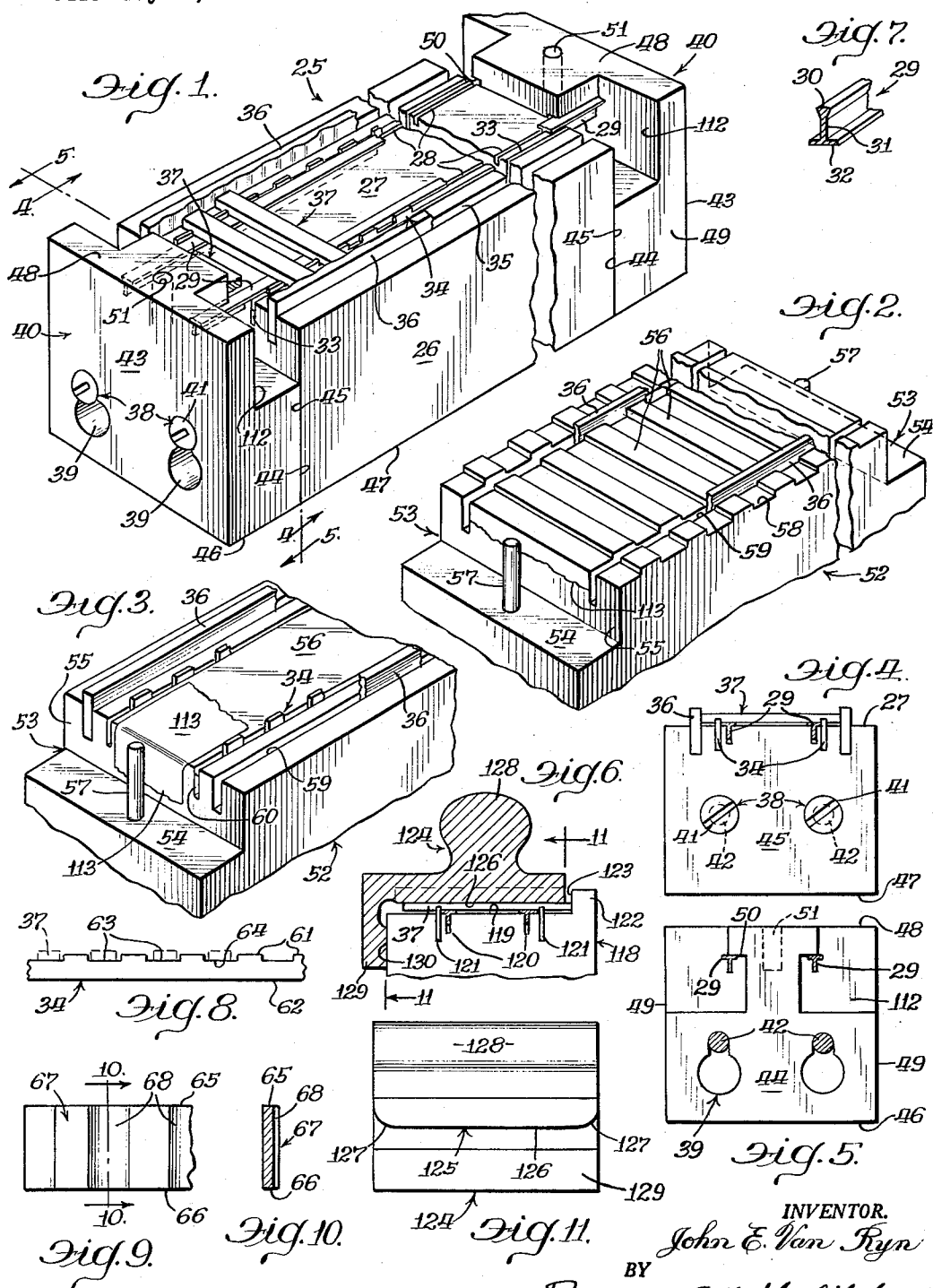
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MINIATURE RAILWAY TRACK ASSEMBLING DEVICE

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2 Sheets-Sheet 1



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MINIATURE RAILWAY TRACK ASSEMBLING DEVICE

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This invention pertains generally to devices and methods for assembling the rails and ties to form the tracks for miniature railways. More specifically stated, this invention relates to improvements in jigs and fixtures for use in the assembling of lengths of scale model miniature tracks, switches, crossings, etc. wherein the parts thereof are all in predetermined relative positions, and to improvements in the methods of assembling such tracks, switches and crossings in such a manner as to secure the desired predetermined relative positioning of all of the various parts of the tracks, switches and crossings.

This invention also relates to improvements in devices and methods for applying adhesives or cements to the rails and ties, in such quantities and at such positions and in such manners as to facilitate the assembly of the various elements of the tracks, switches and crossings.

This invention also pertains to improvements in jigs and fixtures and methods for smoothing or aligning the lower or ground surface of the ties of an assembled length of track, immediately after the rails and ties have been cemented together and before the adhesive or cement has completely set.

This invention also relates to improvements in road bed for scale model miniature railways and to the method of securing the assembled track to the road bed and of applying imitation ballast thereto.

Miniature railway track assemblies of the scale model type are relatively small and, to the extent reasonably possible, are exact size, small scale, reproductions of standard railway track assemblies. The rail elements may be formed of brass and the ties may be formed of wood. A length of miniature rail of the HO-scale variety is commonly formed in lengths of approximately thirty-six inches and has a height, very generally stated of approximately three thirty-seconds of an inch. The ties of an O-scale model track have a length of approximately one and one-eighth inches, a width of approximately five thirty-seconds of an inch and a thickness of approximately one-sixteenth of an inch. In the assembled scale model track, the rails are spaced one from another by a distance of approximately five-eighths of an inch. The foregoing dimensions are given only as a very general example of the class or size of model railway track building elements to which this invention generally pertains.

It is common practice to assemble such miniature rails and ties manually by applying minute quantities of a suitable adhesive or cement to the rails and to the ties and then, one-by-one, applying the ties to the underside of the rails and repeatedly checking and setting the rails for proper spacing to the desired scale or gauge. Such a task is of necessity very tedious and time consuming and, excepting for an unusually skilled model builder, commonly results in the production of a track assembly wherein the rails and ties are improperly spaced and improperly positioned, and wherein quantities of excess adhesive or cement have become smeared over large portions of the surfaces of the ties and rails, detracting from their intended appearance as an authentic reproduction of a full scale railway track.

It is therefore an object of this invention to provide improvements in relatively simple and relatively inexpensive and easy to use jigs and fixtures and methods for applying adhesives or cements in predetermined limited

quantities and at predetermined spaced positions to a large number of ties and to rails to be joined together to produce a length of fully assembled miniature railway track.

It is a further objective of this invention to provide improvements in jigs and fixtures for securely supporting, in releasably locked and predetermined position, a pair of inverted rails preparatory to affixing ties thereto, and to also provide in such jigs and fixtures the necessary means for properly spacing the ties transversely and longitudinally of the pair of rails, whereby to produce an authentic miniature model reproduction of a conventional railway track.

It is a still further object of this invention to so form cement applying jigs and fixtures and rail supporting and positioning jigs and tie supporting and positioning jigs that they may be coactively or cooperatively used to automatically and in a single operation apply a large number of ties to a pair of spaced rails at predetermined positions transversely and longitudinally of the rails.

Another object of this invention is to provide improved devices for applying adhesive or cement in spaced, equal depth and width, ribbon-like patterns, simultaneously to a large number of miniature ties, which may then be removed from such device for affixing to the rails in any desired quantity and to so apply the cement that the ties may be easily and conveniently grasped by the operator.

Still another objective of this invention is to provide improvements in jigs and fixtures for applying ties to rails of a miniature railway track and to provide an improved "ironing" or leveling device for smoothing the "ground" side of the ties immediately after the cement treated ties have been applied to the rails.

Yet another object of this invention is to provide improvements in a road bed for a miniature railway track system, wherein the rail and tie assembly is cushioned and in which imitation ballast may be cemented to the road bed without also cementing such ballast to the ties and rails.

Improved miniature railway track assembly devices and methods embodying or utilizing the various new, novel and useful improvements of this invention, whereby to attain the foregoing objectives, possess the advantages of relative simplicity and inexpensiveness of construction and ease of use, together with sturdiness and durability. The improved jigs and fixtures and methods of operation also possess the advantages of enabling the application to one or many ties of predetermined and regulatable quantities of adhesive or cement on spaced and predetermined portions of the ties and to permit the removal from the cementing position of any number of ties after the cement has been applied thereto. The invention possesses the further advantage of enabling the simultaneous affixing of a large number of ties to the spaced rails in predetermined longitudinal and transverse spacing with respect to the rails, as well as the maintenance of the rails and ties in the selected relative positions until the cement is permanently set. The invention also possesses the further advantage of enabling the individual setting of ties on rails in predetermined and automatically regulated transverse and longitudinal spacing with respect to the rails.

The foregoing and other objectives, important new, novel and useful features and advantages of this invention will become more apparent and be more easily understood upon examination of the following description thereof and the accompanying drawings and the appended claims. It should, however, be remembered that, without desire of limitation, the invention will be described and illustrated as the preferred embodiment of the invention in a miniature railway track assembling device and method. Certain changes and variations in

the invention may, upon review of this application, suggest themselves to those skilled in the pertinent arts, which changes may, however, not depart from the spirit of this invention and may come within the scope of the appended claims.

In the accompanying drawings:

FIGURE 1, is a perspective view, partially in fragmentary section, illustrating in particular the operating surfaces of the improved assembling jig or fixture usable for assembling miniature ties and rails to form a miniature railway track;

FIGURE 2, is a perspective view, partially in fragmentary section, illustrating one form of cementing jig having operative surfaces complementary to the operative surfaces of the assembly jig of FIGURE 1, and usable for applying adhesive or cement to ties supported in spaced positions thereon, and for coacting with the assembly jig of FIGURE 1, in joining cemented ties to spaced rails supported in that assembly jig;

FIGURE 3, is a perspective view, similar to the view of FIGURE 2, showing a modified form of cementing jig;

FIGURE 4, is an end elevational view of the main body portion of the assembly jig taken along line 4—4 of FIGURE 1, plus the showing of the end elevational view of the heads of the screws adapted to hold the assembly jig end block on that same end of the body portion of the assembly jig the retaining screws being shown in end elevations;

FIGURE 5, is an end elevational view of the removable end block of the assembly jig taken along line 5—5 of FIGURE 1;

FIGURE 6, is a transverse elevational view, partially in section, showing in end elevation a modified form of assembly jig and showing transverse sectional elevation of an ironing or smoothing block for smoothing the free sides of the ties fixed to the rails;

FIGURE 7, is a perspective view of the end of a rail element of a miniature railway;

FIGURE 8, is a vertical longitudinal elevational view of a fragment of a tie spacing rack of the type usable as a part of the assembly jig shown in FIGURE 1, and usable as part of the cementing jig shown in FIGURE 3, for spacing ties longitudinally of such jigs;

FIGURE 9, is a vertical longitudinal elevational view of a fragment of a tie end positioning guide board usable as part of the assembling jig shown in FIGURE 1 and also usable as part of the cementing jig shown in FIGURES 2 and 3, for positioning the ends of ties transversely of such jigs;

FIGURE 10, is a transverse sectional view of the positioning guide board taken along line 10—10 of FIGURE 9;

FIGURE 11, is a side elevational view of the ironing or smoothing block shown in transverse section in FIGURE 1 and taken along the irregular line 11—11 of FIGURE 6, showing the body portion of the assembly jig of FIGURE 6 being eliminated;

FIGURE 12, is a plan view of an assembling jig and fixture comparable in operative arrangement to the elements of the main body portion of the assembling jig shown in FIGURE 1, and adapted for use in assembling the ties and rails of a switch for a miniature railway track;

FIGURE 13, is a fragmentary plan view of the body portion of an assembly jig and fixtures comparable in operative assembly of elements to the body portion of the jig shown in FIGURE 1, and adapted for use in building curved lengths of track comprised of assembled ties and rails for a curved track for a miniature railway;

FIGURE 14, is a plan view of an assembling jig and fixture comparable in operative arrangement of parts to the body portion of the assembly jig shown in FIGURE 1, and adapted for use in assembling the ties and rails of a crossing for a miniature railway;

FIGURE 15, is a perspective view, partially in frag-

mentary section, showing a modified form of cementing jig, usable for applying adhesive or cement at spaced positions to a plurality of juxtaposed and abutting ties;

FIGURE 16, is a perspective view of a gluing or cementing shield, usable in applying adhesive or cement at spaced positions to ties supported in the cementing jigs of FIGURES 2, 3 and 15.

FIGURE 17, is a perspective view of a cement scraper and tie compressor usable with the cementing or gluing block and shield shown in FIGURES 15 and 16;

FIGURE 18, is a perspective view showing a modified form of cementing jig;

FIGURE 19, is a plan view of a modified form of a cement shield similar in operative arrangement to the shield shown in FIGURE 16, and adapted for use with the cementing jig shown in FIGURE 20;

FIGURE 20, is a plan view of a modified form of cementing jig similar in operative arrangement to that shown in FIGURE 15, but adapted for use in applying cement to ties of different lengths for use in the construction of switches for miniature railway tracks;

FIGURE 21, is a perspective view of a miniature railway track and improved road bed, according to this invention; and

FIGURE 22, is an end elevational view of the road bed and track assembly shown in FIGURE 21.

Referring to the drawings, in which like elements are identified by like numerals, and referring first to FIGURE 1 of the drawings, 25 represents generally the assembly jig or fixture which includes an elongated and substantially rectangular and main, rigid body portion 26, which, if desired, may be made of wood, as may also the other jigs and fixtures illustrated in the drawings. The main body portion 26 of jig 25 is provided with an upper, flat, rectangular and horizontally disposed face 27 into which have been routed two elongated and parallel rail receiving grooves 28. Grooves 28 are vertically disposed and are spaced equal distances from the longitudinal center line of face 27 on opposite sides of that center line and are of a length equal to the length of the face 27. Face 27, in the embodiment shown in FIGURE 1, is somewhat shorter than the length of a miniature rail 29. Grooves 28 are each of a width sufficient to closely receive the head portion 30 of a rail 29 and are each of a depth sufficient to receive the head portion 30 and the web portion 31 of an inverted rail 29 with the flange portion 32 of the inverted rail straddling the respective groove 28 and resting on the adjacent portions of the upper surface or face 27 of the fixture.

The vertically disposed, elongated tie-spacing rack receiving grooves 33 in the upper face 27 of jig 25 are also parallel to the longitudinal center line of face 27 and are positioned equal distances on opposite sides of that center line and outwardly of and on opposite sides of but close to the adjacent one of the rail grooves 28, and are each of a length equal to the length of face 27. Grooves 33 are each of a width sufficient to easily receive the lower portion of an elongated tie spacing rack 34 and are of a depth slightly less than the maximum height of a rack 34.

The vertically disposed, elongated guide board receiving grooves 35 in the upper face 27 of the main body portion 26 are also parallel to the longitudinal center line of face 27 and are positioned equal distances on opposite sides of that center line and outwardly of and on opposite sides of the adjacent one of the rack receiving grooves 33, and are also of the length equal to the length of the face 27. Grooves 35 are each of a width sufficient to easily receive the lower portion of a guide board 36 and are each of a depth substantially equal to one-half of the height of a guide board 36, and are spaced one from another by a distance slightly greater than the length of a miniature tie 37.

The two opposite vertical ends of the rectangular element 26 are each provided with a pair of horizontally

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disposed, parallel and adjustable retainers, such as round headed wood screws 38, each pair of which are disposed approximately in the horizontal central plane of element 26 with the two screws of each pair disposed at equal distance on opposite sides of the vertical center plane of element 26. Each retainer screw 38 extends through a complementary and aligned and vertically disposed keyhole 39 in a generally rectangular, rail-end locking and jig guide terminal block 40.

In applying an end block 40 to either end of jig element 26, the heads 41 of the associated pair of screws 38 are extended through the enlarged portion of the associated keyholes 39, and the block 40 is then moved down until the shank portion 42 of the respective screw 38 is positioned in the restricted upper end of the associated keyhole 39, and the head 41 of the screw 38 engages the outer vertical end face 43 of that block 40 and the parallel inner end face 44 of that end block 40 engages the adjacent parallel and vertical end face 45 of the jig element 26. End faces 45 are each perpendicular to the longitudinal center line of face 27 of the element 26. In this position, the horizontally disposed and flat bottom face 46 of each of the two thus applied end blocks 40 will be aligned with the flat and horizontally disposed bottom face 47 of the element 26. In this position, the upper and flat and longitudinally disposed top face 48 of each of the end blocks 40 will be positioned somewhat above and parallel to the flat face 27 of element 26.

The upper and inner opposite and substantially rectangular corner portions of block 40 have been removed from the top of block 40 downwardly, measured from the top of flange 32 of an inverted rail 29 in the adjacent groove 28, to a horizontal plane positioned a distance from that flange 32 at least equal to the vertical distance that block 40 must be moved downwardly after screw 38 has been telescoped through the large portion of keyhole 39 before the surfaces 46 and 47 are aligned horizontally. The upper and inner opposite corner portions of block 40, excepting for a ledge 50, have been removed to a width transversely of element 26, measured from the adjacent side wall 49 of block 40 to a distance slightly greater than the distance at which the inner edge of the same flange 32 of the rail 29 is spaced from the same side wall 49. Such removed portion is also of a thickness longitudinally of element 26, when measured inwardly of the block 40 from face 44 thereof to face 112, equal to the distance by which the end of a rail 29 extends beyond the adjacent end face 45 of element 26. The distance by which rail 29 extends beyond the end face 45 of element 26 is equal to the length of rail 29, at each end of each rail 29, required for the rail coupling (not shown). As thus constructed, the upper central portion of the inner face 44 of block 40 is retained and that upper portion is provided with two opposed and outwardly and transversely extending and horizontally disposed shoulders or ledge portions 50 which extend transversely outwardly a distance sufficient to transversely overlie and engage at least a portion of the underlying upper surface of the flange 32 of the inverted adjacent rail 29 seated in a groove 28 of element 26. The top, flat face 48 of each block 40 is provided centrally with a vertically disposed bore hole 51 for receiving an aligned positioning pin which will be described later.

For the automatic assembly of a large number of ties 37 in properly spaced transverse and longitudinal positions on a pair of rails 29 supported in releasably locked position in jig 25, it is desirable to use a cement or adhesive or glue applying jig, such as the jig 52 shown in FIGURE 2.

The cementing jig 52 of FIGURE 2, consists of a generally rectangular body portion of substantially the same length and the same width as the track assembly unit 25 which is comprised of the main body element 26

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and the two end blocks 40. Both of the upper edge portions of jig 52 have been milled out in the form of two-sided grooves 53 positioned at the top of each end of jig 52. The grooves 53 are each of a horizontal width taken longitudinally of jig 52 equal to the width of the top of an element 40 at the mid part thereof, and the grooves 53 are each of a vertical depth slightly greater than the total of the dimension of the vertical spacing of the shoulder 50 of an end block 40 from the top surface 48 of element 40 plus the depth of a tie 37, thus forming a flat and horizontal lower wall 54 perpendicular to a vertical side wall 55 for each one of such two end grooves 53.

The two parallel end walls 55 are perpendicular to the longitudinal center line of the top, flat and horizontal surface portion 56 of the cementing block 52, and walls 55 are spaced one from another by a distance equal to the distance between the end faces 45 of the assembly element 26 of jig 25. Each of the lower wall surfaces 54 of the grooves 53 are provided with a centrally positioned and vertically disposed dowel pin or aligning or positioning pin 57 adapted to telescope closely into a complementary hole 51 in an end block 40 of assembly unit 25 when the units 25 and 52 are co-actively assembled together in a manner later to be described.

The upper surface 56 of the rigid jig 52 is provided with horizontal, spaced, transversely extending, shallow, parallel grooves 58, which are perpendicular to the longitudinal center line of the face 56 and are each of a depth slightly less than the depth or thickness of a tie 37 and are each of a width at least slightly greater than the width of a tie 37. Each end of the top face 56 of jig 52 of FIGURE 2 is defined by a partial groove 58 terminating at one side at the adjacent end face 55 of the spaced jig-locating grooves 53. The upper surface 56 of that jig 52 is also provided with two spaced and longitudinally extending guide board receiving grooves 59 which are parallel to and positioned at equal distances on opposite sides of the longitudinal center line of the top face 56 of jig 52. Grooves 59 are also spaced one from another a distance equal to the spacing between the grooves 35 of the assembly element 26. Grooves 59 are each of a width and of a depth substantially equal to the width and the depth of grooves 35 of the assembly element 26. Such depth is substantially equal to one-half of the height of a guide board 36.

A modified tie cementing block 52 is shown in FIGURE 3. Such modified block 52 is comprised of the same generally rectangular body portion 52, having the spaced and parallel upper end jig-positioning grooves 53, top flat horizontal face portion 56, the same longitudinally centered positioning pins 57, spaced, parallel guide board grooves 59, as well as two longitudinally extending, horizontal and elongated straight tie spacing rack receiving grooves 60, for receiving tie spacing racks 34. Grooves 60 are parallel to the longitudinal center line of the face 56 and are spaced equal distances on opposite sides of the center line of face 56, the same as the spacing of grooves 33 of the element 26 of jig 25. Grooves 60 are of a width and depth equal to the width and depth of the grooves 33 in jig 25.

Rack element 34, may, if desired, be formed of a generally rectangular and relatively thin and relatively narrow and elongated strip of wood equal in length to the surfaces 27 and 56 if intended for use in elements 26 and 52. Rack element 34 is provided with upper and lower straight and parallel edges 61 and 62 respectively, and, rack 34 is of a thickness slightly less than the width of grooves 33 and 60, and is of a maximum vertical dimension or height slightly greater than the depth of the grooves 33 or 60, so that when a rack element 34 is placed in a groove 33 or 60 the top edge 61 of rack 34 is positioned above the flat surface 27

or 56 respectively of element 26 or 52 by a distance slightly less than the depth of a tie 47. The top edge 61 of rack 34 is interrupted by equally spaced rectangular and relatively long and relatively shallow notches 63, which notches are of a length somewhat greater than the width of a tie 37 and of a depth sufficient so that the lower wall or edge 64 of a notch 63 will be positioned below the surface 27 or 56 respectively when rack 34 is positioned in groove 33 or 60. Rack 34 is sufficiently thin that it may be easily bent into a curved contour lengthwise thereof to adapt it for use in curved grooves 33 or 60.

Guide board 36, may, if desired, be formed of a generally rectangular and relatively thin and relatively narrow and elongated strip of wood, also equal in length to the surface 27 or 56 of the elements 26 or 52 respectively. A guide board 36 has upper and lower straight and parallel horizontal edges 65 and 66 respectively, and is of a thickness slightly less than the width of grooves 35 or 59 of elements 26 or 52 respectively, and is of a maximum vertical height slightly less than twice the depth of either groove 35 or groove 59. Guide board 36 is sufficiently thin that it may be easily bent into a curved contour lengthwise thereof, whereby to adapt it to be fitted into curved grooves 35 or 59. One side face 67 of guide board 36 is provided with irregularly spaced, small and substantially rectangular flat segments or surfaces 68 which are tilted slightly and at random with respect to the plane of the face 67 of guide board 36 and are positioned in each instance opposite the end of a tie 37 when assembled in assembly jig 25. The purpose of the irregular surfaces 68 is to engage the end of the adjacent tie 37 and to automatically set the tie 37 at a slight angle to the longitudinal center line of the face 27 of assembly jig 25, to the extent permitted by the rack elements 34, or at a slight angle to the longitudinal center line of the surface 56 of jigs 52 of FIGURES 2 and 3, to extents permitted by the width of the notches 63 in racks 34 or the width of grooves 58 in surface 52 of FIGURE 2, as the case may be.

The modification of the tie cementing jig 69 shown in FIGURE 15 is intended for use in applying cement simultaneously to a large number of juxtaposed ties 37, probably enough such ties 37 to complete an entire length of track which is commonly of a length of approximately three feet. Jig 69 has a main body portion 70 which is elongated and generally rectangular in shape and is provided with two flat and parallel and vertical end faces 71 which are perpendicular to the longitudinal center line of the flat and horizontally disposed top face 72 of jig 69. An elongated straight primary groove 73, of uniform depth, extends longitudinally of jig 69 and has two opposed and longitudinally extending and vertically disposed and parallel side walls 74 of equal and uniform height and length and also has a horizontally disposed flat bottom face 75 parallel to the face 72 of the jig 69. Groove 73 extends from left to right, as viewed in FIGURE 15, through the major portion of the length of the jig 69 and has a horizontally disposed and rectangularly shaped secondary groove 76 extending longitudinally in each of the parallel and vertical side walls 74. Each of the two grooves 76 open into the primary groove 73 throughout their entire length. Secondary grooves 76 are of a vertical depth slightly greater than the vertical thickness of a tie 37 and each groove 76 has a straight and flat and vertical side wall 77 positioned parallel to the center line of 69. Side walls 77 are horizontally disposed and are spaced one from another by a distance slightly greater than the length of a tie 37. As shown in FIGURE 15, the lower portion of groove 73 terminates in a curved and substantially vertical shoulder 78 intermediate the face 75 and the lower edges of the opposed secondary grooves 76. As also shown in FIGURE 15, primary groove 73 joins with a substantially

rectangular infeed groove 79 which has a horizontally disposed and flat bottom face 80 which extends from the top edge of shoulder 78 to the right hand end of 69 and has two spaced and parallel and longitudinally extending and vertical side walls 81 which are perpendicular to the face 80 and equally spaced from and positioned on opposite sides of the center line of the face 72. Side walls 81 are each aligned respectively with the adjacent side wall 77 of the adjacent secondary groove 76. As jig 69 is thus constructed, ties 37 may be disposed in groove 79 transversely of jig 69 and slid into the secondary grooves 76 above the face 75 with the undersides of the ties 37 spaced from and above the face 75.

Element 69 is provided at each of its two end faces 71 with a pair of spaced detents 82 for releasably engaging complementary retaining and positioning features of a cementing shield, as later to be described.

A cement applicator guide 83 includes a horizontally disposed slide bar 84, slidably resting upon face 72 of the element 69, transversely thereof. Slide bar 84 is provided at each of its opposite ends with a depending guide element 85 which closely, but slidably, engages the opposite two side walls 86 of element 69. Slide bar 84 is also provided on its right hand and on its left hand sides, as viewed in FIGURE 15, with a pair of notches 115 on each such sides for receiving the nozzle of a cement tube or a cement applicator (not shown). The two notches 115 of each pair of notches on either side of bar 84 are spaced one from another, transversely of element 69, by a distance equal to the spacing between the pair of rails 29 of a track and are each spaced transversely from the plane of the side wall 77 of the adjacent one of the secondary grooves 76 by a distance equal to the distance a rail 29 is spaced from the end of a tie 37 in the herein contemplated assembly of a miniature railway track.

The cementing shield 87, as shown in FIGURE 16, is adapted for use with the tie cementing jigs shown in FIGURES 2, 3 and 15, and consists of an elongated, horizontally disposed and flat and substantially rectangular main body element 88 having a transverse width slightly less than the spacing of the guide board grooves 59 of jig 52. Shield 87 is of a length substantially equal to the length of face 56 of jig 52. Shield 87 is provided along each of its two side edges with vertically disposed and upwardly extending and parallel and flat and relatively shallow and straight side walls 89 spaced equally on opposite sides of the longitudinal center line of 88, and is also provided along its longitudinal center line with a vertically disposed and upwardly extending and straight reinforcing web 90 which is parallel to and equally spaced from and of the same height as the side walls 89. A vertically disposed flange 91 extends downwardly from and for the full width of each of the ends of element 88. Flanges 91 are parallel and are perpendicular to the plane of element 88 and are of a height somewhat less than the height of the vertical side walls 55 of grooves 53 of jigs 52 of FIGURES 2 and 3. Each flange 91 is provided with a pair of spaced apertures 92 for coacting with the retainers 82 in the ends of the cementing jig 69. A horizontally disposed and longitudinally outwardly extending tab 93 extends from the lower edge of each of the flanges 91. Each tab 93 is provided with a centrally disposed aperture 114 aligned axially with the longitudinal vertical center line plane of element 88 and spaced longitudinally one from another by a distance equal to the longitudinal spacing of the positioning pins 57 of a cementing jig 52. Apertures 114 are each of a size to easily but snugly telescope over a positioning pin 57. Shield 87 is also provided with two parallel and longitudinally extending slots 94, extending substantially the full length of element 88 and parallel to and equally spaced from and on opposite sides of the longitudinal center line of element 88 and spaced one

from another by a distance equal to the spacing of the rail grooves 28 in face 27 of the track assembly jig 25. Slots 88 are each of a width substantially equal to the width of the flange 32 of a rail 29.

The tie compressing and cement scraping unit 95 shown in FIGURE 17, is comprised of a rectangular block 96 having top and bottom, parallel and horizontally disposed faces 97 and 98 respectively, and having a concave left hand end face covered with a concave surface layer or covering 99 which may, for example, be formed of metal and attached to the block 96 in any convenient manner, as for example, by brads 100. The covering element 99 is provided at its horizontal lower edge with two spaced and parallel and downwardly directed short tabs 101. Tabs 101 are of a length slightly greater than the thickness of the shield 88 and are of a width slightly less than the width of a slot 94 in element 88. Tabs 101 are spaced transversely one from another by a distance equal to the transverse spacing of slots 94 in element 88.

The top face 97 and the lower face 98 of element 96 are each provided with a longitudinally extending groove 102 extending along the vertical center line plane of element 96 for the full length of element 96. Each groove 102 is of a width slightly greater than the width of the web 90 of shield 87 and of a depth slightly greater than the height of the web 90.

The modification of the cementing jig 103, as shown in FIGURE 18, is comprised of a substantially rectangular and elongated main body portion having a horizontally disposed and rectangular and flat top surface or face 104. An elongated and narrow and flat rectangular side edge guide plate 105, having a straight vertical and longitudinal extending inner side wall 106 is provided along the left hand longitudinal edge of surface 104 on the top of surface 104. A similar but shorter guide plate 107 is provided along the right hand end of surface 104 on top of surface 104. Guide plate 107 has an inner and vertical and straight wall 108 perpendicular to the inner side wall 106 of element 105 and abutting thereagainst. Side wall 108 is of a length equal to the length of a tie 37 and side walls 106 and 108 are both of a height equal to or slightly less than the height or thickness of a tie 37. A generally rectangular and elongated tie retainer and gluing or cementing guide element 109 is of rectangular transverse cross section and is of a length substantially equal to the length of surface 104 and is of a width substantially equal to the spacing between the rail grooves 28 of the assembly jig 25. Tie retainer element 109 is provided at its two opposite ends with vertical slots 110, each opening into the adjacent one of those ends, and extending vertically through element 109, for receiving the shanks of retainers, such as round-headed screws 111. Screws 111 extend upwardly from surface 104 and are positioned along a straight line perpendicular to face 108, at the center point of face 108. The right hand end screw 111 extends upwardly through element 107 and is spaced from the left hand end screw 111 by a distance slightly less than the length of retainer element 109. Slots 110 are each of such longitudinal dimension as to permit one slot 110 to be telescoped over one screw 111 a distance sufficient to permit the opposite end of retainer 109 to be positioned inwardly of the opposite screws 111 and then slid longitudinally to telescope the other slot 110 over the other screw 111 without disengaging the first screw 111 from its slot 110. The slots 110 are of a width less than the width of the heads of screws 111. Screws 111 may be tightened to compressively engage the upper surface of retainer 109 and in turn press the retainer 109 downwardly to securely engage the underlying ties 37.

The method of cooperatively using the assembly jig 25 of FIGURE 1 and the cementing jig 52 of FIGURE 2, for the simultaneous cementing of all of the required ties 37 to a pair of spaced rails 29, whereby to produce a length of finished miniature railway track, is relatively simple.

A pair of rails 29 are inverted and the head and web portions thereof inserted into the spaced rail grooves 28 of the main body portion 26 of jig 25, with the opposite ends of the rails projecting equally on opposite ends of element 26, and with the flanges 32 of the pair of rails 29 resting on the top surface 27 of the element 26, as shown in FIGURE 1. The guide boards 36 and the tie spacing racks 34 are not at this time used with the element 26 in this operation. The two end blocks 40 are then applied over the retainers 38 and moved downwardly until the lower surfaces 46 of blocks 40 are flush with the lower face 47 of element 26, at which time the opposite ends of the rails 29 will engage the rail end positioning faces 112 of the blocks 40, and the then upper surface of flanges 32 of the inverted rails 29 will be overlappingly engaged by the rail retaining shoulders 50 of the blocks 40, thereby locking the pair of rails 29 in fixed position in the jig 25. A pair of tie end guide boards 36 are then seated in grooves 59 of the cementing jig 52 of FIGURE 2, with approximately the top halves of the boards 36 extending above the grooves 59. A strip of very thin metal foil 113, of a width at least as wide as the spacing between the two outermost edges of flanges 32 of the inverted pair of rails 29 in jig 25, is then applied over the upper surfaces 56 of jig 52, uniformly spaced between the guide boards 36, and extending the full length of the surface 56. Ties 37 are then placed on top of the strip of foil 113 and individual ties 37 are each fully seated downwardly in each of the tie receiving grooves 58 in the surface 56, intermediate the guide boards 36. An additional tie 37 is similarly seated in each of the partial grooves 58 at the opposite ends of the surface 56 of the jig of FIGURE 2.

One or both of the guide boards 36 may have the irregular surfaces 68 positioned adjacent the ends of ties 37 so as to aid in causing the ties 37 to assume a very slightly angular position transversely of the longitudinal axis of jig 52 when the square end of a tie 37 is seated endwise against an irregular surface 68, thereby producing a slightly irregular transverse positioning of the ties 37, similar to that found in full scale railway tracks.

Cementing shield 87 is then applied over the top of the thus seated ties 37 in jig 52, with the apertures 114 in the tabs 93 at the ends of shield 87 snugly telescoped over the positioning pins 57 at the opposite ends of the jig 52, and with the body portion 88 of shield 87 resting on the underlying ties 37.

A thin layer of suitable cement or adhesive may then be applied to the upturned surfaces of flanges 32 of the pair of rails 29 in jig 25, and such cement is then also applied, through slots 94 in shield 87, to the ties 37 in jig 52. The foil 113 will prevent any excess cement from contacting jig 52.

After the cement has been thus applied to the ties 37 in jig 52, cement scraper 95 may be placed in shield 87 with the top face 97 facing downwardly and groove 102 in face 97 telescoped over the web 90 of the shield 87. Scraper 95 is then moved back and forth to remove all cement projecting above the upper surface or portion 88 of shield 87, thereby assuring a uniform thickness of cement on the ties 37.

Shield 87 is then removed from the cementing jig 52 and the jig 25, holding the inverted pair of rails 29, is inverted and placed on top of jig 52, with the two positioning pins 57 of jig 52 telescoping into the complementary two pin receiving holes 51 in the end blocks 40 of the jig 25. The inverted jig 25 is then forcefully pressed down toward the upper surface of jig 52, so that the glued or cemented surfaces of the rails 29 in jig 25 securely engage the glued or cemented surfaces of the ties 37 in jig 52. During such coactive joining of the jigs 25 and 52, the upper portion of the guide boards 36 in the jig 52 will extend into the complementary guide board grooves 35 of the jig 25, and the two faces 55 of grooves 53 of the jig 52 will slidingly engage the inner faces 44 of the two end

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blocks 40 of the jig 25, thereby positively establishing a predetermined positioning transversely and longitudinally respecting the ties 37 and the pair of rails 29 which were assembled in the jigs 52 and 25.

As soon as the cement has properly set and securely joined the ties 37 and the rails 29, jig 25 is lifted upwardly to remove it from the jig 52, together with the ties 37 which are then securely cemented to the pair of rails 29 locked in the jig 25. Jig 25 is then reinverted and the end blocks 40 moved upwardly and outwardly to release them from the retainer screws 38, whereupon the ends of the pair of rails 29 extending beyond the ends of the body portion 26 of jig 25 may be grasped and the securely cemented assembly of rails and ties forming a completed length of track may be raised upwardly to disengage the rails 29 from the jig 25. The length of track thus produced will be found to have the rails 29 exactly spaced to the desired scale and absolutely straight, if the jig 25 was of the straight type, with the ties 37 accurately aligned longitudinally and all accurately positioned in all three dimensions as they were seated in the cementing jig 52.

In the operative use of the jigs 25 and 52 of FIGURES 1 and 3 respectively, in the building of a length of miniature railway track, it should be noted that the main body portion 52 of the cementing jig of FIGURE 3 is very similar to the jig 52 of FIGURE 2. Rails 29 are positioned in jig 25, and locked therein and cement applied thereto, if desired, all in the same manner as previously described with respect to the use of the jig 25 in co-operation with the jig 52 of FIGURE 2. Guide boards 36 are placed in spaced grooves 59 of the jig of FIGURE 3 in the same manner as described with regard to the jig 52 of FIGURE 2. Tie spacing racks 34 are seated in the spaced grooves 69 in the jig of FIGURE 3, and as thus seated the upper, interrupted edges 61 of racks 60 will be positioned above the upper surface 56 of that jig 52 by a distance less than the thickness of the ties 37, and the lower edges 64 of the interrupting notches 63 of racks 34 will be positioned slightly below the surface 56. A very thin metal foil strip 113 is then spread lengthwise over the entire length of surface 56 centrally between the racks 34, covering substantially all of the surface 56 intermediate the racks 34 which extend the full length of the surface 56 as do also the guide boards 36.

Ties 37 are then set in position transversely of the longitudinal axis of jig 52 of FIGURE 3, with the opposite ends of each tie 37 set in oppositely positioned notches 63 in the spaced racks 34. An additional tie 37 is similarly positioned immediately adjacent each of the two ends of face 56 in the partial notches at the opposite ends of racks 34. Cementing shield 87 is then applied over and seated on top of the thus arranged ties 37. The aligning of the shield 87 with the jig 52, and the applying of the cement to the ties 37 and the scraping off of excess cement, if necessary, is all done in the same manner as described above with respect to the cementing of the ties and scraping of excess cement in the use of jig 52 of FIGURE 2. Jig 25, holding the pair of rails 29, is then inverted and seated on top of jig 52 of FIGURE 3, with pins 57 of jig 52 telescoped into complementary holes 51 of the end blocks 40 of jig 25, and with faces 44 of the jig 25 slidably engaging faces 55 of jig 52 and with the upper ends of guide boards 36 telescoped into grooves 35 of jig 25. As soon as the ties 37 are securely cemented to rails 29, jig 25 is removed from the jig 52 of FIGURE 3, and the assembled track removed from jig 25, all in the manner described above with respect to the cooperative use of the jig 25 and the jig 52 of FIGURE 2.

In the building of track by the cooperative use of jig 25 and either of the two jigs 52, a coating of cement may, if desired, be applied to the upturned face of flanges 32 of the inverted pair of rails 29 in jig 25, immediately preceding the positioning of jig 25 on the jig 52.

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In the use of jig 25 of FIGURE 1 in the building of track by a slower method involving the placing of the ties 37 individually on the pair of spaced rails 29, two guide boards 36 are seated in grooves 35, or if desired only one guide board 36 may be used, and two racks 34 are seated in grooves 33. Guide boards 36 and racks 34 are of the same length as the top face 27 of jig 25, and approximately the upper half of guide boards 36 extends above the face 27 and the upper edges 61 of racks 34 extend above the face 27 of element 26 with the bottom edge 64 of each notch 63 in such racks 34 positioned below the plane of surface 27. Two rails 29 are then assembled in inverted order in the rail grooves 28 of jig 25 and locked in position by end blocks 40 in the manner previously described. A suitable number of ties 37, as required for a length of track, are then inserted one-by-one into the infed groove 79 at the right hand end of cementing jig 69 of FIGURE 15, transversely of the longitudinal axis of the jig 69, with the ends of the ties 37 abutting the side walls 81 of the groove 79 and resting on the lower surface 80 of groove 79. From time to time the thus supported ties 37 are moved from right to left into the secondary and opposed tie end supporting grooves 76 in the side walls 74 of the groove 73 of jig 69, and as thus supported, substantially all of each tie 37, except the two end portions thereof, will be supported above and spaced above the lower wall 75 of groove 73 in a position perpendicular to a vertical center line plane of jig 69, with the central portion of each such tie 37 positioned in such a plane. Ties 37 are thus assembled in close side-by-side position in grooves 76 until the jig 69 is full from the left hand end over to the curved shoulder 78.

Applying the cement to the thus assembled ties 37 may be readily accomplished by the use of a suitable cement packaged in a conventional cement tube having an elongated nozzle (not shown). Such a downwardly directed nozzle is substantially vertically disposed in a notch 115 of the cement applying guide 83 overlappingly seated, as previously described, on the top surface 72 of the jig 69, with the open lower end of such nozzle positioned to slidably engage the upper surface of the assembled and closely juxtaposed ties 37. Preferably the open end of such cement nozzle (not shown) is of a width approximately equal to the width of a flange 32 of a rail 29. Cement applying guide 83 is then moved back and forth along the length of jig 69 to apply a ribbon of cement from the nozzle onto the upper underlying surface of the ties 37 directly below the then used notch 115. Such nozzle of the cement supply tube is next positioned in a transversely adjacent notch 115 of element 83 and another ribbon of cement is applied to the underlying ties 37, directly below the second thus used notch 115, thereby providing two ribbons of cement on the upper surface of the assembled ties 37 in jig 69 with the ribbons of cement spaced apart approximately equal to the spacing of the rails 29 in the jig 25. It has been found that by virtue of the fact that the surface 75 of groove 73 is spaced from the underside of the assembled ties 37, any cement that may tend to seep through between adjacent ties 37 will not drop down to the surface 75 or engage surface 75.

After the cement has thus been applied to the ties 37 in jig 69, the ties 37 may be removed one by one from either end of jig 69, and a slight upward or downward movement of the thus removed tie 37 along the end face of jig 69 will sever the ribbons of cement joining that tie to the remaining ties in jig 69. The removed ties are then inverted and are placed one by one, with the cemented side down, over the rails 29 in jig 25. If desired, a layer of cement may also have been applied to the upper surface of the inverted rails 29 in jig 25, immediately preceding the applying of the ties 37 to the rails 29. In applying the ties 37 to the rails 29, the opposite ends of each tie 37 are seated in opposite notches 63 of the racks 34 with an end of each tie 37 abuttingly

engaging the adjacent surface of one guide board 36. The ties 37 are pressed down securely against the rails 29 and permitted to remain in that position until the cement has set to join the ties to the rails. An end tie 37, at each of the opposite ends of jig 25, is positioned in the partial notches 63 at each of the opposite ends of the racks 34 and is sideways abutted against the inner face 44 of the adjacent one of the end blocks 40, thereby assuring the correct length of rails 29, for coupling purposes, extending beyond the last tie at each end of the length of the thus formed track.

After the ties 37 have been thus secured to the pair of rails 29, the end blocks 40 are removed from jig 25, in the manner previously described, and the assembled length of track is removed from the jig 25 in the manner also previously described.

In applying the cement to the ties 37 in the jig 69, it may be desired to use cementing shield 87 instead of the cement applying guide 83, in which event the guide 83 is removed from jig 69 and shield 87 applied over the assembled ties 37 by seating the underside of the main body portion 88 of shield 87 in the groove 73 on top of the assembled ties 37 and snapping the end flanges 91 over the opposite ends 71 of the jig 69 so that the pair of apertures 92 in each flange 91 engages the pair of retainers 82 in the opposite ends 71 of jig 69. Ties 37 thus underlying the shield 87 may be moved into closely spaced juxtaposition by seating the lower groove 102 in the face 98 of scraper 95 over the web element 90 of shield 87 and extending lugs 101 into slots 94 and using the lugs 101 to move the assembled ties 37 into side-by-side position. Ribbons of cement are then applied to the side-by-side assembled ties 37 in jig 69 through the pair of spaced slots 94 of shield 87 in the manner as previously described. After the cement has thus been applied to ties 37 in jig 69, the scraper 95 may be inverted and again applied to or positioned on shield 87 with groove 102 in face 97 telescoped over the web 90, and the element 95 used to scrape off the excess cement from shield 87 in the manner previously described.

Instead of applying cement to the assembled ties 37 in the jig 69 for use in building a track in jig 25 when jig 25 is provided with guide boards 36 and positioning racks 34, cement may also be applied to a group of ties 37 assembled in close side-by-side position on the upper surface 104 of jig 103 of FIGURE 18. In jig 103 the ties 37 are arranged with one end of each tie 37 abutting the tie end guide face 106 and the last tie at the right hand end also sideways abutting the jig end guide 108. As thus assembled, the ties 37 are locked in position by the overlying, rigid retainer and cementing guide element 109 adjustably secured in position by the retainers 111. Cement is applied in ribbons, as from a tube (not shown), to the upper surfaces of the assembled ties 37 immediately adjacent the opposite side walls 116 and 117 of the element 109. Side walls 116 and 117 are equally spaced on opposite sides of the central portion of the ties 37 and are also spaced one from another by a distance approximately equal to the spacing between the inner edges of flanges 32 of the pair of rails 29 assembled in jig 25. After the cement has thus been applied to the assembled ties 37 in jig 103, retainer 109 is removed from jig 103 and the thus cemented ties may be used in the assembly of a track in the same manner as described above with respect to the combined use of jig 25 and jig 69 in the building of a length of track for a miniature railway.

FIGURE 6 discloses a cross section of a modified form of rectangular main body portion of an assembly jig 118 which may be substituted for the main body portion 26 of jig 25 and used in connection with the two end blocks 40 for the assembly of lengths of tracks by a method of affixing individual ties 37 to the pair of rails 29. The upper face 119 of jig block 118 is provided with spaced

and parallel rail grooves 120 and tie spacing rack grooves 121, comparable in depth, length and positioning and spacing to the grooves 28 and 33 respectively of the assembly jig 25. Jig 118 is not provided with grooves for receiving the guide boards 36, but is instead provided on its upper surface 119 with a vertically disposed and longitudinally extending ledge 122 having a straight and vertically disposed longitudinally extending guide face 123 parallel to rail grooves 120 and positioned outwardly from one groove 120 by a distance equal to the distance by which the end of a tie 37 extends outwardly from an adjacent rail 29. In assembling the ties 37 on the rails 29 in jig 118, the ties 37 have cement applied thereto in a manner as previously described for the combined use of the jigs 25 and 69, and the ties are applied to the rails in the same manner except that the similarly positioned ends of the cement treated ties 37, instead of being abutted against a guide board 36, as in jig 25, are in this instance abutted against surface 123 of ledge 122 to align the ties 37 longitudinally of the jig 118.

After the ties 37 have thus been applied to the pair of rails 29 in jig 118, they may be forced downwardly into close and uniform engagement with the adjacent upturned surfaces of flanges 32 of the inverted rails 29 by compressively sliding the ironing or smoothing element 124 back and forth over the top surface of the inverted ties 37 longitudinally of the jig 118. Element 124 is comprised of a substantially rectangular smoothing surface portion 125 of a width approximately equal to the length of the ties 37. Portion 125 has a flat and horizontally disposed under face 126 which has rounded edges 127 at its longitudinal ends and also has an upwardly directed hand grip 128, and a guide flange 129 depending from its side edge opposite the positioning ledge 122 of the jig 118. Flange 129 slidably engages the flat vertical and longitudinally extending side wall 130 of jig 118, which side wall 130 is parallel to face 123 of ledge 122. When only one guide board 36 is used in the jig 25 of FIGURE 1 the tie smoothing and setting element 124 may also be used to compressively seat ties 37 on the rails 29 when assembled in the jig 25.

FIGURE 12, shows a plan view of a switch assembling jig 131 which would be operatively arranged like unto the main body portion 26 of the jig 25, for building a switch unit instead of a length of straight track for which latter purpose jig 25 is used. To the extent possible, the upper surface 132 of assembly jig 131 is provided with rail grooves 28 and guide board grooves 35 and rack grooves 33 comparable to the corresponding arrangement of grooves in the element 26 of jig 25. Three end blocks 40 would be used in conjunction with jig 131. Extra curved rail grooves 133 are provided in surface 132. The arrangement of the grooves 28, 33 and 35 in FIGURE 12 are such as to permit the necessary use of longer ties 37 at the mid portion of the switch element.

The jig element 134 shown in FIGURE 13 has a main body portion 135 which is provided in its upper surface 136 with curved guide board grooves 35 and curved rack grooves 33 and curved rail grooves 28. Jig 134 would be used with two end blocks 40 in place of the jig 25 when building curved track sections. Depending upon the radius of the grooves 28, 33, and 35, the notches 63 in one or both of the rack elements 34 must be of such width and position as to allow for the difference in length of the radially inner and the radially outer racks 34 in jig 134.

The jig 137 shown in plan view in FIGURE 14 is usable in building crossing track units for miniature railway tracks. Jig 137 is substantially rectangular and includes in its upper flat face a pair of rail grooves 138 arranged at right angles one to another and intersecting centrally of the jig 137, together with guide board grooves 139 and rack grooves 140 positioned adjacent the rail grooves 138, as shown in FIGURE 14.

FIGURE 19 shows a modified cementing shield 141 having cement slots 142 and side flanges 143 and a central web 144, for use with a modified cementing jig 145 shown in FIGURE 20 for applying cement to ties 37 of varying length for use in building switches in jig 131 of FIGURE 12. Cementing jig 145 is operatively constructed like unto the jig 69 of FIGURE 15, excepting that instead of being straight and of uniform width as is the jig 69, jig 145 gradually increases in width from one end to the other end, whereby to enable the accommodation of ties 37 of varying length as required in the building of switches.

After the length of track comprised of a pair of rails 29 and ties 37 cemented thereto has been completed according to any of the previously described methods, it may be conveniently mounted on a miniature road bed 146 as shown in FIGURES 21 and 22. Road bed 146 as shown in those figures is intended for a straight length of track but may obviously also be suitably formed for curved lengths of track. Road bed 146 is comprised of a lower, flat, elongated section of wood 147 covered by a layer of sound deadening, granulated cork sheeting 148 cemented thereto. The ends 149 of section 147 and covering 148 are flush vertically and the longitudinal sides 150 of the road bed are beveled upwardly and inwardly at an angle of approximately sixty degrees, to produce an upper tie contacting surface slightly wider than the length of the ties 37 of the track section.

To apply the track section assembly to the miniature road bed 146, a suitable cement or glue is applied to the upper surface of the layer of cork sheeting 148, whereafter the assembled track, with the rails directed upwardly is placed centrally longitudinally of the top of the road bed 146, with the coupling ends of the rails extending endwise beyond the end faces 149 of the road bed 146. Ties 37 of the track are then pressed downwardly to seat them securely against the cemented upper surface of 148. Imitation railway track ballast 151 is then sprinkled over the thus assembled road bed and track while the cement coated onto the upper surface of 148 is still tacky. As soon as the cement on surface 148 has set sufficiently, the assembled road bed and track assembly cemented thereto is raised and shaken slightly to remove any excess ballast 151, thereby completing the operation of building the assembled road bed and track. It will be found that by this procedure the ballast 151 will adhere only to surface 148 and will not adhere to the ties 37 or the rails 29.

The particular type of adhesive, glue or cement used to join or secure or affix the miniature ties to the rails or to join or secure or affix the assembled rails and ties to a miniature road bed, does not form part of this invention. Suitable glues, cements and adhesives for the fixing or securing or joining of such ties to such rails, etc. are well known to all those skilled in the well established practice of model railroad building. As hereinbefore indicated, a suitable glue or cement for the use therein intended would be one that would remain tacky until all the ties had been assembled upon a pair of rails and would not become permanently set for a reasonable time after such assembly so as to permit the making of adjustments. If ties are to be affixed to the rails individually the operator may desire the cement to remain tacky until the entire group of ties for such pair of rails have been securely pressed into desired position, and thereafter become permanently set, whereby to securely fix or join the ties to the rails. The cement or glue may also be sufficiently thin as to permit ready application thereof to the rails or ties in a thin layer by means of a conventional glue tube and associated orifice nozzle or spreader. Obviously, those skilled in the pertinent arts and wishing to work relatively slowly or relatively fast, will, from years of experience, be well aware of exactly which type of cement or glue or adhesive they will want to use so as to permit working at the desired speed for the individual operator.

From the foregoing description of this invention and from the accompanying drawings, it will be apparent that this invention realizes the introductorily enumerated objectives respecting the improved miniature railway track assembling device and method. It will similarly be apparent that the invention possesses the hereinbefore listed advantages and provides new, novel and useful improvements in miniature railway track assembling device and methods.

Having thus described and illustrated the preferred embodiments of this invention, the invention is not to be interpreted as being restricted to the specifically illustrated and described embodiments, as set forth in the drawings and as hereinbefore described, except insofar as is necessitated by the appended claims and the disclosures of the prior art.

The invention is hereby claimed as follows:

1. A jig for assembling a length of miniature railway track including rails and ties, comprising, in combination, a rigid body portion having an elongated and flat track assembling surface, and a pair of parallel rail receiving grooves in said assembling surface, said assembling surface being adapted to support in fixed position a pair of rails seated in said grooves in inverted position with respect to said track assembling surface and having the tie engaging base portions of said rails positioned outwardly from said grooves and resting upon said flat track assembling surface.
2. A jig according to claim 1, having at one end thereof a surface for abutting the side of a tie.
3. A jig according to claim 1, having at one end thereof a stop means for limiting the movement in at least one direction of a rail seated in one of said rail receiving grooves.
4. A jig according to claim 3, wherein said stop means is so constructed and arranged as to limit the possible longitudinal movement in at least one direction of the adjacent end of a rail seated in one of said rail receiving grooves and to also limit the movement of that same end of such a rail in one direction perpendicular to such possible longitudinal movement.
5. A jig according to claim 1, having a guide board receiving groove in said assembling surface and extending longitudinally of said surface parallel to said pair of rail receiving grooves and positioned to one side of said pair of rail receiving grooves and spaced from the adjacent one of said rail receiving grooves by a distance equal to the distance by which the end of a tie of said railway track extends transversely beyond the adjacent rail in said railway track.
6. A jig according to claim 1, having a tie spacing rack receiving groove in said assembling surface extending longitudinally of said surface parallel to said pair of rail receiving grooves.
7. A jig according to claim 1, having a pair of parallel tie spacing rack receiving grooves in said assembling surface extending longitudinally of said surface parallel to said pair of rail receiving grooves.
8. A jig according to claim 7, wherein said pair of tie spacing rack receiving grooves are spaced uniformly on opposite sides of said pair of rail receiving grooves.
9. A jig according to claim 6, having a pair of parallel tie spacing rack receiving grooves in said assembling surface and positioned parallel to said pair of rail receiving grooves with at least one of said rack receiving grooves being positioned outwardly of said pair of rail receiving grooves, a guide board receiving groove in said assembling surface positioned outwardly of and parallel to said pair of rail receiving grooves and also positioned outwardly of the adjacent one of said rail receiving grooves by a distance equal to the distance by which the end of a tie of said railway track extends transversely beyond the adjacent rail of said railway track.
10. A jig for applying cement to ties for a miniature railway track, comprising, a substantially rectangular and

elongated and rigid body portion having an upper face and having first groove means in its upper face extending the full length of said upper face, said first groove means having parallel and vertical side walls extending the major portion of the length of said first groove means and spaced one from another by a distance less than the length of the ties of said track and having a flat and horizontal bottom surface intermediate said side walls and of a length substantially equal to the length of said side walls, and a horizontally disposed and substantially rectangular second groove means in each of said side walls and opening into said first groove means and positioned above said bottom surface of said first groove means and being of a length equal to the length of said side walls, said second groove means being positioned opposite one another and each of said second groove means having a lower edge and an upper edge and also having a vertical side surface parallel to said vertical side walls of said first groove means, said side surfaces being spaced one from another by a distance slightly greater than the length of a tie of said track, said first groove means having an inflexed portion at one end thereof provided with a flat and horizontal bottom surface aligned with the lower edges of said second groove means and also having vertical and parallel side faces each of which side faces is aligned longitudinally with the adjacent one of said side surfaces of said second groove means.

11. A jig for assembling a length of a miniature railway track including rails and ties, comprising, in combination, a rigid body portion having an elongated and flat and horizontally disposed and substantially rectangular upper assembling surface which is wider than the width of the length of track to be assembled thereon and which is somewhat shorter than the length of the rails of the length of track to be assembled thereon, a pair of straight and parallel rail receiving grooves in said assembling surface extending longitudinally of said surface for the full length of said surface and positioned parallel to and equally spaced on opposite sides of the longitudinal center line of said surface, said rail receiving grooves each being of a width and of a depth sufficient to readily receive the head portion and the web portion of an inverted miniature rail with the flange portion of said rail resting on said surface on opposite sides of the respective rail receiving groove, a pair of straight and parallel tie spacing rack receiving grooves in said surface extending longitudinally of said surface for the full length of said surface and positioned parallel to and equally spaced on opposite sides of said pair of rail receiving grooves and each rack receiving groove being of a width and of a depth sufficient to receive the major portion of a tie spacing rack, a pair of straight and parallel guide board receiving grooves in said surface extending longitudinally of said surface for the full length of said surface and positioned parallel to and equally spaced on opposite sides of said pair of rack receiving grooves and being spaced one from another by a distance slightly greater than the

length of a tie of said track and each of said guide board receiving grooves being of a width and of a depth sufficient to receive approximately the lower half portion of a guide board, stop means releasably secured to each end of said rigid body portion, each of said stop means including a tie abutting surface for sideways engagement of an adjacent tie for establishing longitudinal limits for the positioning of the ties of said track with respect to the ends of the rails of said track and which ends of the rails extend beyond the ends of said body portion, said stop means also including ledge means for at least partially overlappingly engaging the upper surface of the flange of a portion of the inverted rail of said track which extends longitudinally beyond said body portion and also including a rail end abutting surface, said tie abutting surface and said rail end abutting surface of said stop means coacting with the end of a rail to limit longitudinal movement in one direction and vertical movement of that end of that rail, a pair of elongated and substantially rectangular and substantially flat guide boards seated separately in and of a length equal to the length of said guide board grooves and having the upper portion of said guide boards extending vertically out of said guide board grooves by a distance substantially greater than the thickness of a tie whereby to adapt the guide boards to be engaged by the ends of ties of said track, and a pair of elongated and substantially rectangular and substantially flat tie spacing racks seated separately in and of a length equal to the length of said rack receiving grooves and having the upper portion of said racks extending vertically out of said rack receiving grooves to a distance at which the upper edges of said racks are positioned at an elevation lower than the upper surface of a tie resting on a pair of inverted rails supported in said rail grooves, said upper edges of said racks each having longitudinally spaced and substantially rectangular notches of a length somewhat greater than the width of a tie and having the lower edge of each notch positioned below said surface and having corresponding notches in said pair of racks aligned transversely of said rack receiving grooves whereby to adapt a pair of aligned notches to receive the opposite end portion of a tie of said track.

References Cited by the Examiner

UNITED STATES PATENTS

232,965	10/1880	Hastings	161—44	XR
1,875,410	9/1932	Babcock	156—562	XR
2,231,089	2/1941	Rorer	238—10	
2,901,819	9/1959	Schaffan	238—10	XR

FOREIGN PATENTS

278,194	5/1927	Great Britain.
635,810	4/1950	Great Britain.

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