

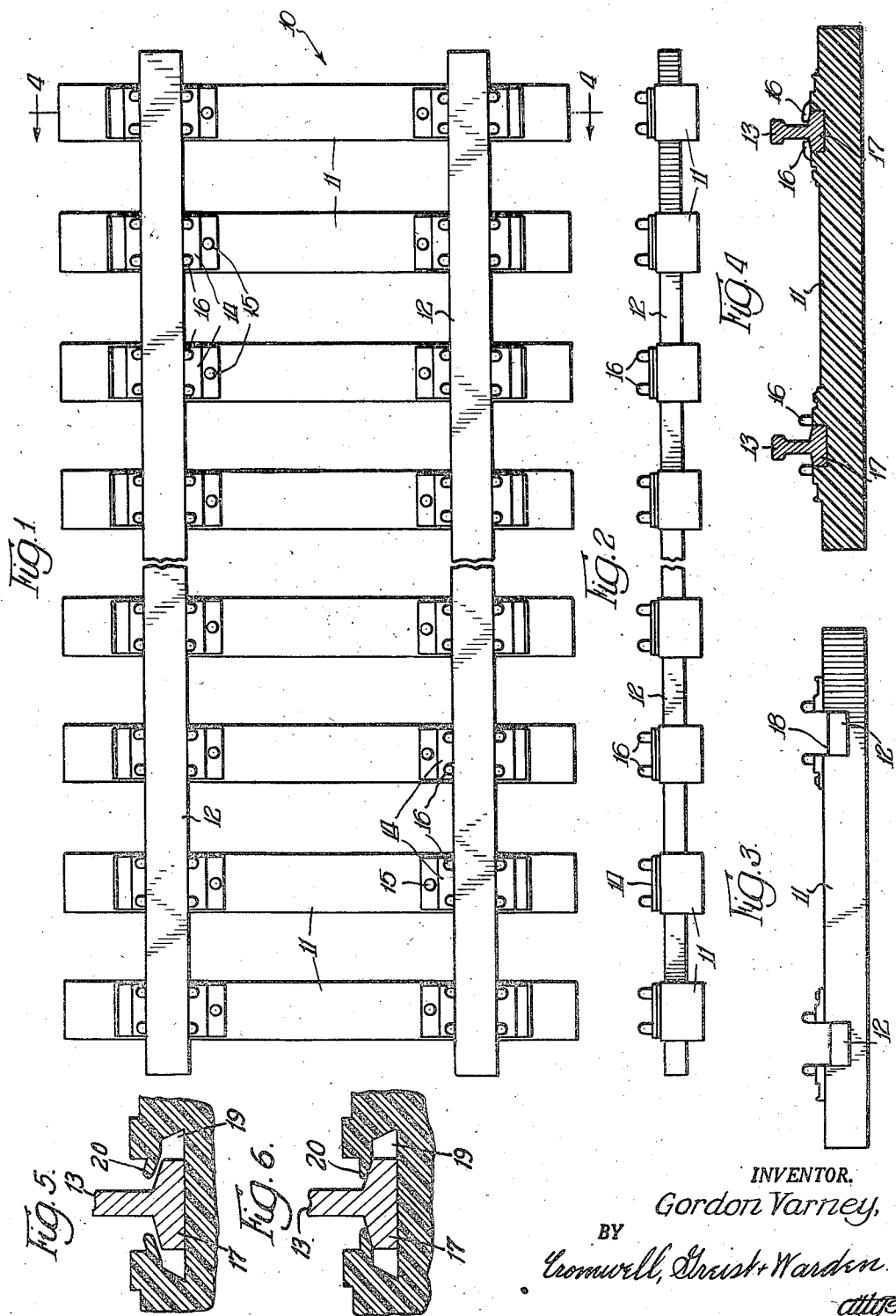
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TRACK STRUCTURE FOR MODEL RAILWAYS

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TRACK STRUCTURE FOR MODEL RAILWAYS

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11 Claims. (Cl. 238—10)

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This invention relates to an improved rail supporting track and tie construction primarily intended for the use of model railway builders and operators, and for that purpose, and other purposes to be hereinafter brought out, constructed in its entirety of comparatively inexpensive thermoplastic material.

An object of the present invention is to provide a track tie of the type described having provisions for appropriately receiving rails and for locating and aligning successive sections or lengths of such rails relative to one another.

A further object is to provide a track structure of the type described including a plurality of transverse sleepers or ties having provisions thereon and otherwise well adapted to closely simulate full scale track and tie structures.

A further object is to provide a track and tie structure of the type described primarily for use in model railways, in which said ties have portions simulating or substantially duplicating the tie plates of a conventional railroad, and, furthermore, having aligned pairs of locking lugs in each tie which are fabricated of thermoplastic material and can be deformed into clamping engagement with the flange of the rail to hold the same in place.

A still further object of the invention resides in the provision of a tie structure of the type described, which is of a substantially rigid though readily moldable thermoplastic material whereby said locking lugs may be plasticized and readily deformed to rail gripping position by the use of a specially devised iron, thereby greatly facilitating and expediting assembly of the rails.

Yet a further object is to provide a tie structure of the class described including a plurality of ties of thermoplastic material joined to one another by an elongated stringer likewise of plastic material and integrally connected to the ties, whereby the latter may be sold in strips or sections and rails assembled to said sections in a convenient and expeditious manner.

A still further and more general object of the invention is to provide a model railway tie construction of thermoplastic material well adapted to simulate the appearance of a conventional railway roadbed and tie having provision for receiving and registering toy rails and for locking said rails in place by heat molding the tie or a portion thereof into clamping engagement with the rail or a portion thereof, whereby said rails are thereafter maintained rigidly in desired location.

Other and further objects of the invention

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will be pointed out or indicated hereinafter or will be apparent upon an understanding of the invention or upon actual use of it.

For the purpose of aiding in an explanation of the invention I show in the accompanying drawing, forming a part of this specification, preferred forms in which it may be embodied. It will be understood, however, that this disclosure is presented merely for purpose of illustration and is not to be regarded as imposing unnecessary limitations on the appended claims, which are intended to define the invention.

In the drawing,

Fig. 1 is a top plan view illustrating a section of model railway tie in accordance with the present invention, representing a plurality of ties or sleepers with tie plates thereon, said ties being integrally connected to one another by elongated parallel stringers or supports;

Fig. 2 is a side elevational view of the structure illustrated in Fig. 1;

Fig. 3 is an end view of the structure clearly illustrating the provisions for the reception of rails and more clearly illustrating the thermoplastically deformable locking lugs integral with the tie plates;

Fig. 4 is a view in transverse vertical section through a tie and associated structure on a line corresponding to line 4—4 of Fig. 1, indicating the appearance of a rail when initially associated with the tie and when in locked relation to the latter; and

Figs. 5 and 6 are fragmentary views in transverse vertical section similar to Fig. 4, illustrating a somewhat modified embodiment of the invention, Fig. 5 showing the tie with a rail initially inserted therein and Fig. 6 indicating a manner in which the tie or portion thereof is deformed or plastically molded into engagement with the rail flange.

The present invention provides for the use of model or toy railway hobbyists an improved tie or roadbed construction which I have found to greatly assist and expedite the assembly of rails into a sturdy and displacement-resisting unit. It is a feature of the invention that the track ties and related components are fabricated integrally of a thermoplastic material which may be supplied in coloration to faithfully simulate the appearance of an existing full size track construction. Further advantages flowing from this feature will be hereinafter pointed out and described in detail.

Referring to the drawing, the reference numeral 10 in general designates the improved

model railway tie structure in accordance with the invention. This consists essentially of a plurality of longitudinally spaced tie or sleeper members 11 which are constructed to scale to represent the shape of a conventional wooden railway tie. These ties are interconnected to one another in appropriate spaced relation by elongated stringers or interconnecting members 12 which are molded integral with the ties 11 of any appropriate thermoplastic material. This is preferably moldable at a relatively low temperature, although, of course, preserving its rigidity at room temperature and substantially thereabove. Examples of such materials which are fusible at moderate molding temperatures, and are well known in the art, are vinyl resins, cellulose acetate, and the like, all obtainable on the market under various trade names.

I contemplate that ties assembled into sections and held in place by the integral stringers 12 will be sold in appropriate lengths by department stores, model shops, and the like, along with rail sections of the type which I illustrate in Figs. 4, 5 and 6 and designate by the reference numeral 13. The tie sections and rail sections may be sold individually to the consumer for subsequent assembly by him in the home or work shop, or, if desired, the rails and ties may be sold in the assembled and locked relationship to be described. In either case, I contemplate that the appearance of conventional railway ties, tie plates and all other related parts shall be simulated as closely as possible in the device.

The ties 11 are each provided with a simulated tie plate 14 integrally molded thereon and further simulations of spikes or other securing means 15 holding the said plates on the ties 11. Tie plates 14 are each provided with opposed pairs of integral upstanding lugs 16 spaced from one another a distance corresponding to the approximate width of the flange 17 of a standard model railway rail; and successive ties or tie plates are provided with aligned seats 18, which are in alignment with the intervening stringer portions 12, for the seating reception of the rails 13 in the manner illustrated in Fig. 4. By this means it is possible for the user to locate and position a rail appropriately relative to the ties by a single movement, and the rail will be registered properly and held pending clamping in its final position.

In order to secure the rails in place, it is only necessary to apply sufficient heat to the upstanding locking lugs 16 to plasticize and bend the same over onto the flange 17 of the rail in the manner clearly illustrated on the right hand portion of Fig. 4. This secures the rail firmly and rigidly in its intended position. I am aware that it has heretofore been proposed to hold such rails in place by bendable metal tabs of one type or another. However, objection to this method exists in that it is impossible to secure a uniform application of pressure and uniform holding action on the rail. Moreover, any metal member which is deformable onto a rail is equally deformable out of engagement with the rail with the result that the jars and other rough treatment to which devices of this type are inevitably subject soon cause loosening of the rails. The present construction is entirely free from this drawback. Once the lugs 16 are plastically deformed into place, they remain in that position; moreover, uniform locking pressure is maintained on the rail and it is held from movement not

only in the direction of its insertion but also it is retained against longitudinal movement in the direction of its length.

I am likewise aware that model railway structures have been devised wherein the rail is held in place by frictional engagement in a groove formed in flexible rubber material. This concept has the disadvantage that the rail is displaced from the desired position with practically the same ease as it is assembled into such position. My construction is deemed to substantially improve over constructions of this type.

A further advantage exhibited by the herein described invention is that the ties, tie plates and locking lugs, along with the interconnecting members 12 holding the ties in spaced relation, are all integrally connected and molded in a single thermoplastic molding operation. There is absolutely no need for any assembly in the manufacture of the device and the sole further step which needs to be taken is the final deformation of the locking lugs 16. This arrangement is obviously well suited to quantity manufacture at exceedingly small cost.

In Figs. 5 and 6 I illustrate a somewhat modified embodiment of the invention wherein the ties are provided with dovetailed grooves 19, being initially molded in this form. The ties will be interconnected to one another by members such as the members 12 and it will be observed by reference to Fig. 5 that the vertical and lateral dimensions of the undercut providing dovetailed grooves 19 are such that the rail 13 is insertable therein only by sliding movement in the direction of its length. With the rail inserted in a plurality of ties in the manner described, the adjacent lips 20 at the upper opening of the groove are thermoplastically deformed slightly into engagement with the upper surface of flange 17 in the manner illustrated in Fig. 6 to thereafter retain the rail in place. Other modifications involving the principle of the invention will suggest themselves from the above disclosure.

I contemplate that an appropriate electrically heated iron may be made available to users having a heated surface conformed to appropriately enable the lugs 16 to be plasticized and appropriately deformed as in Fig. 4, or the lips 20 to be plasticized and engaged with the rail, under moderate or manual pressure. Depending upon the particular type of deformable means on the rail, the iron may be supplied with removable ironing shoes to the end that a quick and uniform heating and deformation of the plastic retainer will result. It is this uniformity of engagement, plus ease of assembly of the rails and resistance to accidental displacement, which constitute primary advantages of the herein described structure.

What I claim is:

1. As an article of manufacture, a tie structure for a model railway comprising a plurality of substantially parallel spaced ties and interconnecting means holding the same in longitudinally spaced relation, said ties having preformed pairs of upstanding locking elements thereon adapted for engagement with a model rail to lock the same on the tie, the elements of each pair being spaced in the direction of length of the tie for ultimate reception of a rail therebetween, said ties and locking elements being integrally molded of thermoplastic material which is thermally fusible and moldable under moderate molding temperature and manual pressure, but

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comparatively rigid under normal room conditions, the locking elements being moldable under heat and moderate pressure inwardly toward a rail placed therebetween and downwardly into uniform locking engagement with the latter.

2. As an article of manufacture, a tie structure for a model railway comprising a plurality of substantially parallel spaced ties and interconnecting means holding the same in longitudinally spaced relation, said ties having preformed pairs of upstanding locking elements thereon adapted for engagement with a model rail to lock the same on the tie, the elements of each pair being spaced in the direction of length of the tie for ultimate reception of a rail therebetween, said ties, interconnecting means and locking elements being integrally molded to constitute a sectional unit of ties from a thermoplastic material which is thermally fusible and moldable under moderate molding temperature and manual pressure, but comparatively rigid under normal room conditions, the locking elements being moldable under heat and moderate pressure inwardly toward a rail placed therebetween and downwardly into uniform locking engagement with the latter.

3. As an article of manufacture, a tie for a model railway having preformed locking elements thereon spaced in the direction of length of the tie for ultimate reception of a rail therebetween, said tie and locking elements being formed integrally with one another of thermoplastic material which is thermally fusible and moldable under moderate molding temperature and manual pressure, but comparatively rigid under normal conditions and the elements being moldable under heat and moderate pressure inwardly and downwardly into locking relation to a rail disposed between the elements.

4. As an article of manufacture, a tie structure for model railways comprising a tie of rectangular section approximating in its cross section and length the proportions of a standard railway tie, said tie being provided with a groove extending transversely thereof which is adapted to receive a rail, and upstanding rail locking elements on said tie adjacent either end of the tie spaced from one another in the direction of the length of the tie a distance approximating the width of a rail receivable in said groove, said tie and locking elements being integrally molded of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and said elements being moldably deformable by heat and moderate pressure into uniform locking engagement with a rail disposed therebetween.

5. As an article of manufacture, a tie structure for model railways comprising a tie of rectangular section approximating in its cross section and length the proportions of a standard railway tie, said tie having tie plates thereon simulating a railway tie plate and being provided medially of said plates with a groove extending transversely thereof which is adapted to receive a rail, and upstanding rail locking elements on said tie plates adjacent either end of the tie spaced from one another in the direction of the length of the tie a distance approximating the width of a rail receivable in said groove, said tie, tie plates and locking elements being integrally molded of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and said elements being moldably deform-

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able by heat and moderate pressure into uniform locking engagement with a rail disposed therebetween.

6. As an article of manufacture, a tie structure for model railways comprising a plurality of spaced ties of rectangular section approximating in cross section and length the proportions of a standard railway tie, and adjacent the ends thereof provided with grooves extending transversely thereof adapted to receive spaced rails, means for interconnecting said ties in a unit, and pairs of upstanding rail locking elements on said tie adjacent either end thereof, the elements of each pair being spaced from one another in the direction of the length of the tie a distance approximating the width of the respective rails receivable in said grooves, said ties, interconnecting means and locking elements being integrally molded of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and said elements being deformable by heat and moderate pressure into uniform locking engagement with a rail in said groove.

7. As an article of manufacture, a tie structure for model railways of the type described, comprising a plurality of longitudinally spaced rigid ties interconnected as a unit to one another and having longitudinally aligned rail-receiving grooves therein adapted for the ultimate reception and registering of a rail, said ties being of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and having portions adjacent and on opposite sides of said grooves moldable by moderate heat and pressure toward a rail subsequently disposed therein to thereafter resist displacement of the same from the groove.

8. As an article of manufacture, a tie structure for model railways of the type described, comprising a plurality of longitudinally spaced rigid ties interconnected as a unit to one another and having longitudinally aligned rail-receiving grooves therein adapted for the ultimate reception and registering of a rail, said ties being integrally molded in sections of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and having portions adjacent and on opposite sides of said grooves moldable by moderate heat and pressure toward a rail subsequently disposed therein to thereafter resist displacement of the same from the groove.

9. As an article of manufacture, a tie structure for model railways of the type described, comprising a rigid tie member of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, simulating in its length and section the dimensions of a standard rail tie, said tie member having a transverse, undercut, generally dovetail-shaped groove in the top surface thereof adapted to slidably receive a rail in the direction of length of the latter and being thereafter deformable by the application of manual pressure and moderate heat at either side of the top opening of said groove toward the rail to resist displacement of the latter.

10. As an article of manufacture, a tie structure for model railways of the type described, comprising a plurality of spaced relatively rigid tie members and longitudinal interconnecting means therefor integrally molded of thermoplastic material which is thermally fusible and

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manually moldable under moderate molding temperature and pressure, simulating in its length and section the dimensions of a standard rail tie, said tie members having aligned undercut grooves in the top surface thereof adapted to receive a rail and being adapted to be deformed thereafter toward the rail by the application of manual pressure and moderate heat adjacent the top opening of said groove to resist displacement of the rail.

11. As an article of manufacture, a tie structure for model railways of the type described, comprising a plurality of longitudinally spaced

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ties and means interconnecting the same as a unit to one another, said ties having longitudinally aligned grooves in the top surface thereof adapted for the ultimate reception and registering of a rail, said ties being of thermoplastic material which is thermally fusible and manually moldable under moderate molding temperature and pressure, and having integral portions adjacent the top opening of said groove moldable by manual pressure and moderate heat toward a rail disposed therein to resist displacement of the same from the groove.

GORDON VARNEY.

Certificate of Correction

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GORDON VARNEY

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Column 6, line 22, Claim 6, after the word "being" insert *moldably*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 24th day of December, A. D. 1946.

[SEAL]

LESLIE FRAZER,

First Assistant Commissioner of Patents.