(No Model.) 3 Sheets—Sheet 1.

D. F. HOLMAN.

RAILWAY TRACK LAYER.

No. 315,034. Patented Apr. 7, 1885.

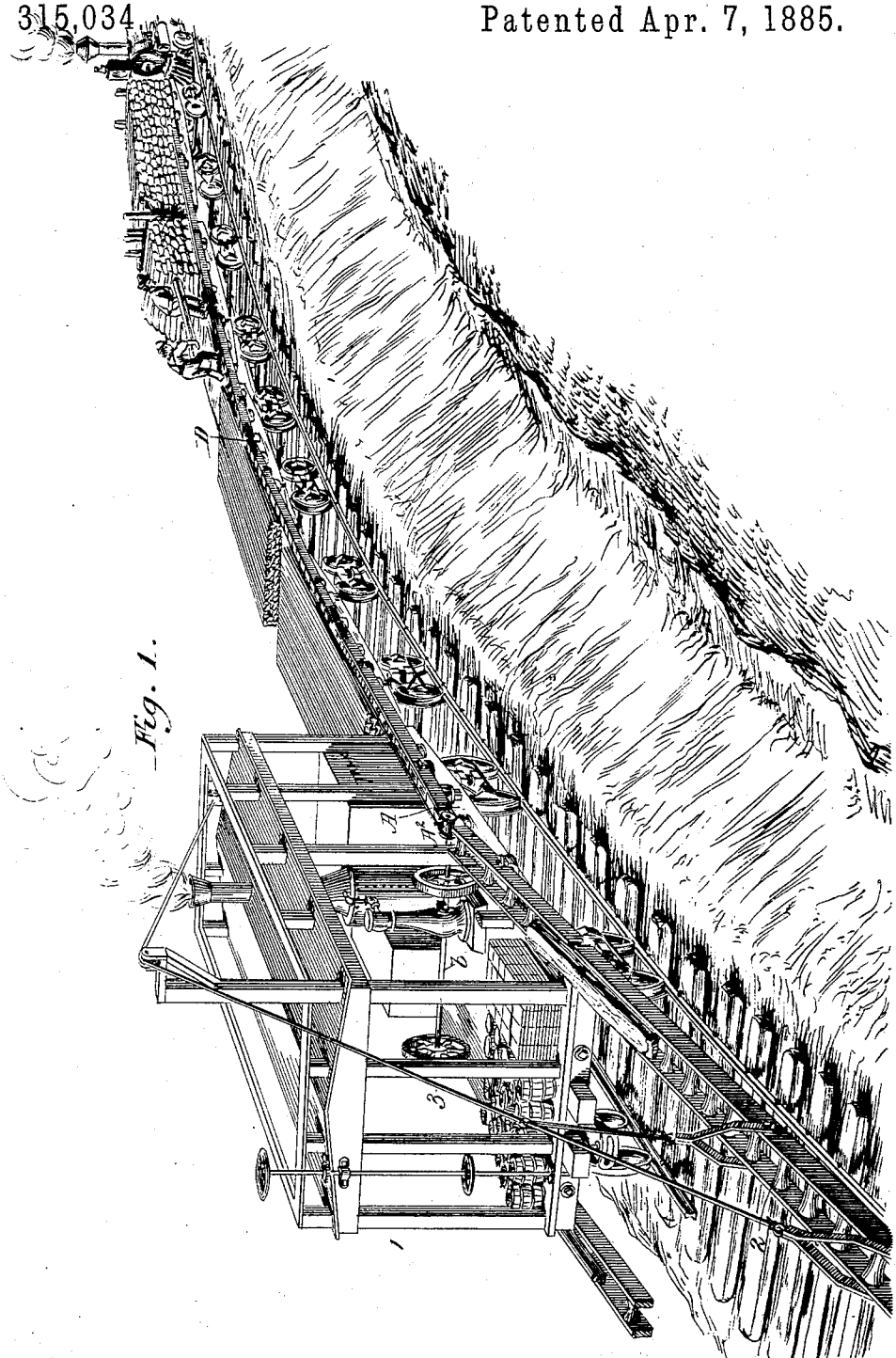


Fig. 1.

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D. F. HOLMAN.

RAILWAY TRACK LAYER.

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Fig. 2.

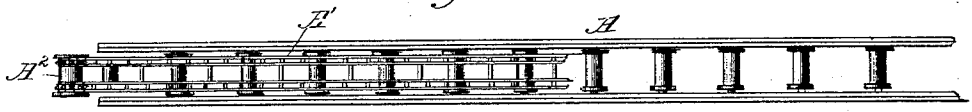


Fig. 3.

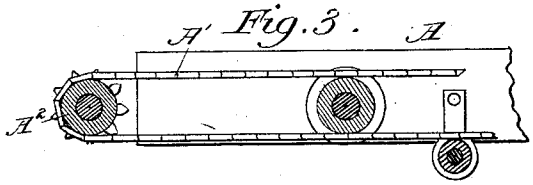


Fig. 4.



Fig. 5.

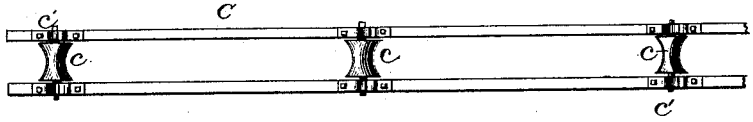


Fig. 7.

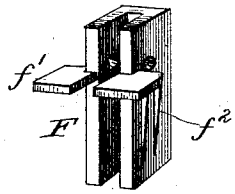


Fig. 6.

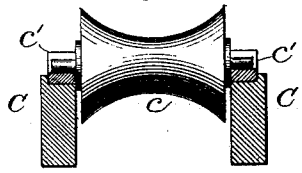


Fig. 9.

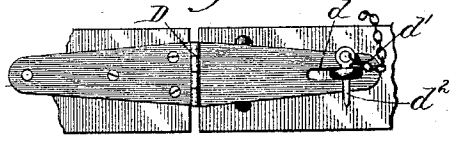
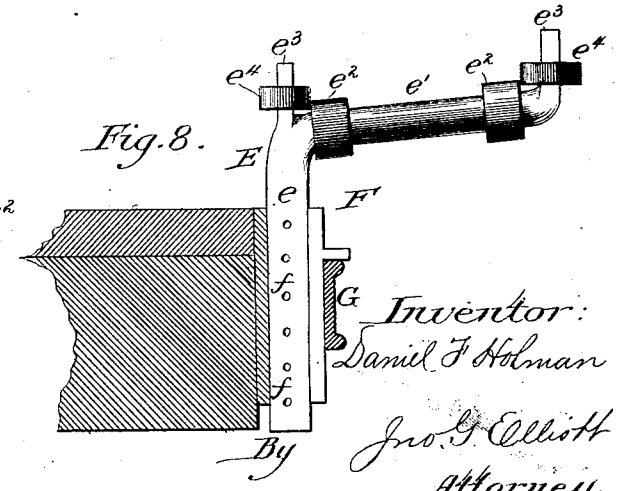


Fig. 8.



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RAILWAY TRACK LAYER.

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Fig. 10.

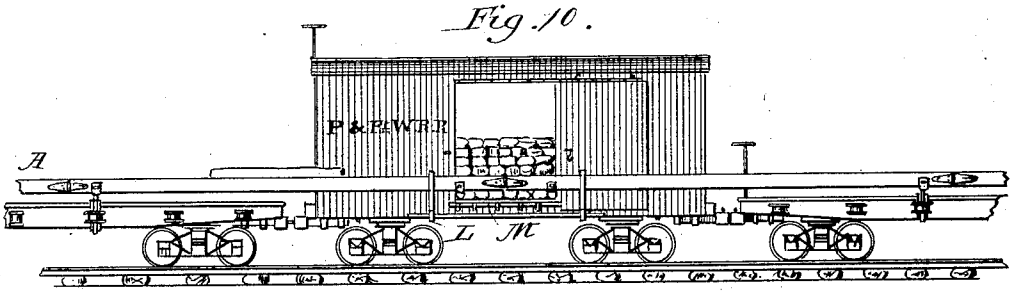


Fig. 11.

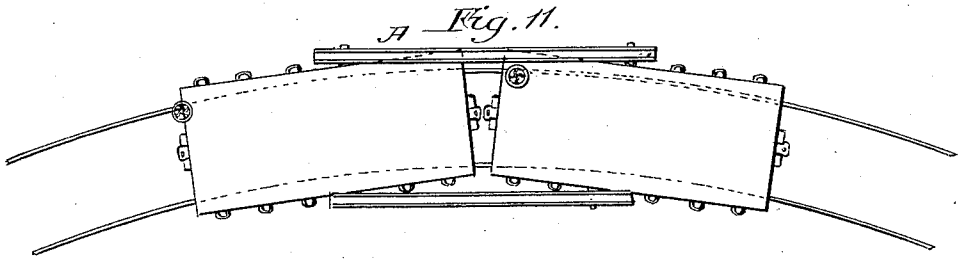


Fig. 12.

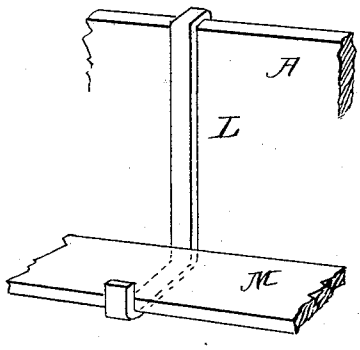


Fig. 13.

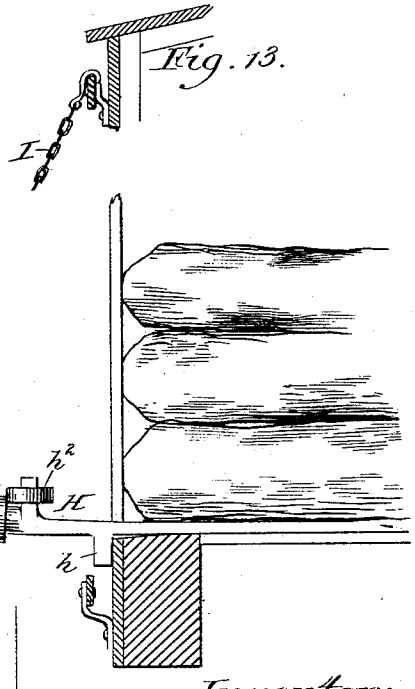
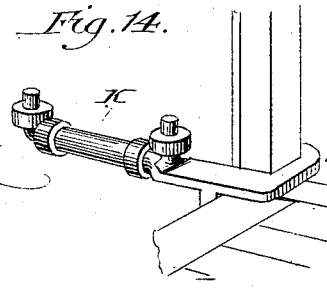


Fig. 14.



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UNITED STATES PATENT OFFICE.

DANIEL F. HOLMAN, OF CHICAGO, ILLINOIS.

RAILWAY-TRACK LAYER.

SPECIFICATION forming part of Letters Patent No. 315,034, dated April 7, 1885.

Application filed September 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL F. HOLMAN, a citizen of the United States, residing in Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Railway-Track Layers, of which the following is a specification.

This invention relates to that class of track-layers in which a train of cars is provided along each side with a tramway upon which the rails and ties, as they are unloaded from the cars, are first placed and then carried forward to the front end of the train, at which point they are delivered onto the road. Heretofore these tramways have been made in sections, with each section substantially equal in length to the length of a car, and supported from the latter with its ends coincident with the end of the car, so that spaces shall be left between the sections, in order to provide for the backing and starting of the train, and also to allow the train to turn or stand on curves in the road. The ties and rails unloaded from the cars and placed upon such tramways have been fed forward by manual labor, and in order to admit of their being thus manipulated the tramways have been adjusted so as to incline downwardly from the rear to the front end of the train; but by reason of such construction and arrangement objectionable spaces or gaps occur at intervals in the tramway, so that ties, especially, are liable to be impeded in their progress; also, difficulty arises when high and low cars or cars of unequal width are used in the train, or when the road-bed is uneven, since one section of the tramway will be either higher than the next or to one side thereof, thereby presenting abrupt obstructions in the tramway. Again, when the train is standing on a curve, sharp angles will necessarily occur in the tramway, so that ties or rails cannot pass the same.

The object of my invention is to obviate such defects, and a further object is to provide a continuous sectional and jointed tramway adapted both for high and low cars and for cars of unequal widths; and to such end I hinge the ends of the sections of a tramway together and arrange the said sections so that their ends shall come at or about the middle portions of the cars; also to provide a sectional tramway which when the train is on a curve shall not present sharp angles, and shall allow more ready manipulation of the ties and rails; and to this end I elevate the tramway above the platform of the cars. Further objects are to provide novel means for supporting and for raising or lowering the tramway at any desired point or points, said supports being also designed to prevent injury to the tramway when the train is backing or starting forward, and to allow the train to back or start without disturbing the tramway; also to provide certain auxiliary devices for use in connection with a box-car in the train, all as hereinafter described and claimed, and illustrated in the annexed drawings, in which—

Figure 1 represents in perspective a track-layer constructed in accordance with my invention and stationed upon the road in readiness for operation. Fig. 2 is a plan view of a portion of a tramway adapted for ties, and illustrates a portion of the endless chain or carrier. Fig. 3 is a longitudinal section through a portion of the same on an enlarged scale, and Fig. 4 is a transverse section. Fig. 5 is a plan view of a tramway more especially adapted for rails, and Fig. 6 is a transverse section on an enlarged scale. Fig. 7 is a perspective view of a sleeve or socket-piece adapted to receive the standard or leg portion of one of the brackets employed for supporting the tramways; and Fig. 8 is a view, partly in section and partly in elevation, representing one of the said brackets held in the socket-piece shown in Fig. 7. Fig. 9 represents the meeting ends of two sections of a tramway hinged together in accordance with my improvement. Fig. 10 represents a side elevation of a portion of a train with a box-car between two platform-cars and a tramway running alongside the same. Fig. 11 is a top or plan view showing two platform-cars and a section of each one of the tramways, said view being designed to illustrate the position of said sections when the train is on a curve. Fig. 12 is an enlarged perspective view illustrating a portion of the platform and one of the hangers designed for supporting the same in front of a box-car door. Fig. 13 illustrates, partly in section and partly in elevation, a portion of a loaded box-car with one of the detachable supports for a tramway. Fig. 14 illustrates a portion of the doorway of a box-car and a different form of support for a tramway.

In Fig. 11 have shown a train of cars loaded

with rails and ties, and having a sectional jointed tramway along each side of the train, one of these tramways being adapted for ties and the other for rails. I have also illustrated a tool-car, 1, at the front of the train, and a chute, 2, for receiving the ties from one of the tramways and delivering the ties on the road. This chute is hinged at one end and suspended by a cable, 3, by means of which it can be swung or shifted laterally, in order to bring it into proper position for delivering the ties.

The tramway A for ties, which consists of parallel bars with spools or rollers intermediate of and journaled in the same, is rendered efficient as a conveyer for the ties by means of an endless sprocket-chain, A′, running over the spools, and propelled by a suitable sprocket-wheel at one of the ends of the tramway, one of said wheels, A^2, being shown in both Figs. 2 and 3.

The rollers of the tramway are made of metal, and are provided at their ends with annular flanges to prevent the endless chain from shifting against the side bars. It is also proposed to make these rollers hollow, and of metal, and to mount such construction of roller on a stationary axle which passes through the closed ends of the roller, whereby the bearing is entirely at the ends of the roller. Power for driving one of these wheels can be derived from an engine located upon the tool-car 1, as in Fig. 1, in which it will be seen that the driving-shaft *b* carries at one end one of the sprocket-wheels A^2. The shaft at this end will not be journaled in the tramway, whereby liability of damage by reason of any shock or concussion will be avoided; but, if desired, suitable connection could be made between a sprocket-wheel at the other end of the tramway and a locomotive used at the other end of the train to drive the latter. By employing such endless carrier for the ties the tramway can be arranged on a level, and hence all of the objectionable features of an inclined tramway are avoided, among which latter stand prominent the difficulty of employing an inclined tramway on a long train. In order to further facilitate the travel of ties along the tramway, and to avoid such friction as would be caused by the rubbing of a tie against the side of either one of the side bars of the tramway, I bevel both inner sides of said bars of the tramway, as at *a*, Fig. 4, and at suitable intervals along said beveled sides I provide anti-friction wheels or rollers A^3, against which the ties will strike in the event of their shifting to either side of the tramway as they are carried forward. For rails, however, I prefer the construction shown in Figs. 5 and 6, in which I have shown the rollers *c* of the tramway C made flaring at both ends, so as to form in each roller a groove or annular concavity, which serves as a guard for the rail. These rollers have their journals mounted in suitable bearings, *c*′, in or on the side bars of the tramway.

Having thus described the construction of the tramway, I will now proceed to describe the manner in which I connect together the sections thereof, and the same alongside a train. Each section of a tramway, in lieu of having its ends terminating at the ends of a car, has its ends respectively terminating at or about the middle of two contiguous cars, as shown in Fig. 1, so that no objectionable spaces shall occur between the ends of the sections of tramway, but, to the contrary, a continuous tramway be formed. The tramway-sections are hinged together at their meeting ends, so as to form a continuous jointed tramway, the joints of which are situated at points at or near the center or length of the car. By disposing and connecting the tramway-sections in this manner it will be observed that the side of the car will be tangent to the circle described by the central points of the side of the car. The sections will be chords to the same circle, and said circle or its component arcs will be less than the arcs described by any point of the end of the car, and hence the ends of this tram attached to the center of the car describe a less curve than the ends of the car. It will also be observed that by this arrangement of the trams their ends are not subject to a lateral vibration, tending to throw the meeting ends of the two trams out of alignment with each other, for this lateral vibration increases from the center of the car toward its ends and attains its maximum at the point between the meeting ends of the two cars, while at the center of the car it is reduced to a minimum, and to such a degree that the meeting ends of both trams partake simultaneously of the same movement of the car, and are therefore at all times maintained in alignment with each other. The contiguous ends of these sections of tramway are flexibly connected together by means of hinges D, secured to the ends of the sections, and preferably of the strap form shown in Fig. 9, and in order to allow the tramway to bend at these joints, and also to allow the cars to turn or stand on curves, each tramway will be placed above the level of the platform-cars employed in the train. One leaf of a hinge is rigidly secured to one section of the tramway, while the remaining leaf of the hinge is connected with the opposing end portion of the next succeeding section by means of a yielding connection, so as to prevent breakage and allow for the necessary lengthening of one and shortening of the other of the two tramways while the train is on a curve. As shown, this yielding connection is attained by forming on said leaf of the hinge a slot, *d*, in which a staple, *d*′, attached to the tramway-section is received, a pin, d^2, being passed through said staple in order to prevent the hinge from slipping off. A variety of yielding connections might, however, be employed, as will be evident.

The foregoing arrangement, while allowing the train to turn curves, will at the same time present under all circumstances a continuous

unbroken tramway, and also prevent the occurrence of two acute angles when the train is standing on a curve. In order to adapt the tramway to cars of different heights and widths without causing any obstruction in the tramways, I provide the following means for supporting and for raising or lowering the tramways at any desired point, so that at such point as either or both tramways may be raised there shall be no abrupt inclination. At intervals along the sides of the cars I provide vertically-adjustable brackets E, (see Fig. 8,) two of said brackets being usually sufficient for each side of a platform-car. These brackets consist each of a vertical standard, *e*, having at its top end an arm, *e'*. This arm is provided with rollers e^2, on which the tramway rests, and it is further provided with two upright fingers, e^3, that serve as axles for anti-friction rollers e^4 for the sides of the tramway. By such arrangement the tramway will not be strained or injured when the train is backing or moving up. The standard portion of this bracket is adjustably held in a metal sleeve or socket, F, and as a means for maintaining the bracket in adjustment its standard portion is provided with a line of perforations, *f*, into any one of which a bolt or pin passed through the sleeve or socket can be inserted. The socket-piece F shown in Fig. 7 can be made open along one side, and is adapted to fit in the usual pocket, G, (shown in section, Fig. 8,) it being customary to provide such pockets along the sides of a car. The socket-piece is further provided with ledge *f'*, which, when the socket-piece is fitted in the pocket, will rest upon the latter, and thereby hold the socket-piece in place.

As a means for steadying and holding the socket-piece tightly within the pocket, the former is provided upon its exterior with one or more wedge-shaped ribs, f^2, which, when the socket-piece is fitted in a pocket, will bind against the inner wall of the latter. It will be evident, however, that the precise form of socket-piece herein shown need not be strictly adhered to, the main point being a socket-piece that shall be capable of receiving the standard portion of a bracket, and which can be readily fitted in any one of the pockets on a car and prevent wabbling of the bracket under all circumstances. By thus maintaining the tramways above the level of a platform-car it will be seen from Fig. 11, in which two sections of a tramway are shown, that when the train is either rounding or standing upon a curve any two opposite sections of the tramways will preserve their parallelism and allow the two opposing corners of two coupled cars to swing round under one of the sections. It will be understood, however, that in traveling with a loaded train the tramways can be lifted off their brackets and hung on the same, so as to be out of the way of the load on the cars, thus presenting no obstruction to the rounding of sharp curves while not in use. In a train of this character it may be desirable to make it up with one or more box-cars, as in Fig. 10, in which a box-car is shown between two platform-cars. In such event the tramways elevated above the platform-cars will pass alongside the box-car and be provided with the hinge-joints at or about the middle of the box-car.

In Fig. 13 I have shown means for supporting a tramway alongside a box-car, said means consisting of a stake or bar, H, having one end adapted to be driven under the ties when the car is loaded. This bar has a lug, *h*, which will rest against the car, thus not only serving as a stop, which will limit the extent to which the bar can be driven in under the pile of ties, but also act as a brace for the bar when driven in, as shown, said lug being adjustably secured to the bar, if desired. The outer end of the bar constitutes a support for the tramway, which rests upon a pair of wheels or rollers, *h' h'*, arranged on the bar, like the support shown in Fig. 8. This bar has also suitable vertical fingers constituting axles for a pair of anti-friction rollers, h^2, for the sides of the tramway. To uphold this support, I run a chain, I, from its outer end up to a staple or any other fixture near the upper part of the car. This support is intended for use when the car is full; but after the ties have been unloaded from in front of the door the form of support K (shown in Fig. 14) may be used. The supporting portion of this device—that is to say, the part on which the tramway rests—is similar to that shown in Figs. 8 and 13, the mode of attachment being different in that it has a hook-shaped end adapted to embrace one of the door-posts, as shown.

L, Fig. 12, indicates a hanger suspended from the tramway and employed for supporting a platform, M, in front of a box-car door, it being understood that two or more of these hangers will be used in front of each car. A hanging platform of this nature placed in front of the car-door, and about two feet below the same, will provide a convenient step for a workman to stand on and receive the ties delivered from the car, and enable him to place them in position on the tramway.

From the foregoing it will be seen that the tramways are above the floors or platforms of the platform-cars, and that hence workmen can walk along the cars and have ready access to the tramways.

In some instances the endless carrier might be temporarily disused, or for some reason or other taken off, and in such case the workmen can walk along the cars and push the ties along the tramway without being obliged to use the pike-poles, which are necessarily employed in pushing ties along a tramway when the latter is below the platform, or on a level therewith, as heretofore.

In conclusion, I may observe that the sections of tramway alongside the front or tool car are rigid therewith, and that the sprocket-wheel for driving the endless chain is located between one of said sections and a sec-

tion of the main line of tramway, by means of which arrangement injury to the sprocket-wheel is avoided during the backing or starting of the train.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a railway-track layer, a continuous jointed tramway supported on a plane above the level of the car-platform and composed of a series of sections connected together at their meeting ends by means of hinges attached to the tramway-sections, substantially as described, and for the purpose set forth.

2. In a track-layer, a continuous sectional and jointed tramway having the ends of its sections maintained at or about the middle portions of the sides of the cars, substantially as described.

3. In a railway-track layer, a continuous sectional and jointed tramway arranged above the level of the car-platform and having the ends of its sections meeting at points substantially over the middle portions of the side of the car, substantially as and for the purpose described.

4. The combination, with a bracket for supporting the tramway of a track-layer, of a socket-piece constructed to receive the leg of the bracket and adapted to fit in a pocket on the side of a car, substantially as described.

5. The bracket E, adapted to support a tramway, and provided with rollers upon its portion on which the tramway is supported, substantially as described.

6. The combination, in a track-layer, of the elevated tramway with a vertically-adjustable bracket, E, provided with anti-friction rollers upon which the tramway rests, and with anti-friction rollers constituting bearings for the sides of the tramway, substantially as described.

7. The combination, with a sectional tramway for track-layers, of a hinge connecting two meeting ends of the sections and having a yielding connection with one of said sections, substantially as described.

8. In a railway-track layer in which a tramway is supported alongside of a train of platform-cars, the combination, with a box-car, made up with the train, of a stake provided with anti-friction rollers for supporting the tramway at a point opposite the box-car, and adapted to be driven under the load in said box-car, and a chain connecting the stake with the car, substantially as described.

9. The combination, with a box-car, of the platform supported by means of hangers in front of the car-door, substantially as and for the purpose described.

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