HANGER CONNECTION FOR OVERHEAD TRAMWAYS.

UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, RICHARD B. SHERIDAN, a citizen of the United States, residing therein at the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Hanger Connection for Overhead Tramways, of which the following is a full, clear, and exact description, reference being made to the drawings that accompany and form a part of the specification, wherein similar parts are designated by the same letters in each instance.

The invention is related to that form or system of overhead tramways wherein the lower flanges of a suspended I-beam serve as a trackway for the wheels of a truck, trolley, electric locomotive, or like vehicle that is traversed dependently thereon, and wherein, more especially, the I-beam trackway itself is suspended from and beneath a series of fixed I-beams in the framework or structure above. In such circumstances, the manner in which the connections between the supporting and supported beam are to be made has always been a troublesome question, inasmuch as in addition to considerations of strength, efficiency, cheapness, and ease of assemblage, it has had to take into account the more frequent condition when wheels of large diameter are to be used on the flanges, and when in consequence, whatever connecting device is employed, must take up or occupy only a minimum of the space of the supported beam below the upper flange of the same.

It is accordingly the object of the present invention to provide a convenient, simple and inexpensive means for making the connections referred to, and one, from the nature of things, which needs but little or not at all, to interfere with or limit the operative field of other parts and mechanisms with which said means is correlated.

In the drawings, Figure 1 is a plan view of the hanger-members, in place in connection with two I-beams, when the latter are at right angles one to the other. Fig. 2 is a similar view when said beams are related obliquely to each other. Fig. 3 is an elevation of the beams when connected together in the manner indicated in Fig. 1. Fig. 4 is a vertical longitudinal section of one of said hanger-connections or pieces on the line 1, 1, of Fig. 1, and, Fig. 5 is a transverse horizontal section of the same on the line 2, 2, of Fig. 3.

Throughout said drawings A is an I-beam girder such as is assumed to be fastened, in a parallel series, above the projected course of the overhead trackway T suspended therefrom. To effect this suspension, by the means under consideration, the lower flanges a and a' of the beam A, must be left exposed and free to be engaged by the hanger-pieces as hereinafter pointed out. The tramrail T is represented as an I-beam of the same weight and dimensions as the beam A, although a precise coalescence of this nature between these parts is not essentially demanded. The upper flanges of the tramrail T are respectively denoted by t and t'; the lower flanges of course serve as the rails or trackway for the trolley or other vehicle which is to be mounted and travel thereon in the usual manner.

The hanger-pieces proper, which are to unite and retain the two beams in their cooperative relations referred to, are designated by H. They may be of any appropriate shape, and are to have a suitable length to engage the tramrail T when the latter is at the predetermined height and place with respect to the ground or floor-space below. In the figures, said pieces have the form of a pentagonal prism. In most cases, they will be made of cast steel. In order to effect the desired engagements between the lower flanges a and a' of the supporting beam A, and the upper flanges t and t', of the tramrail T, I provide near the top of said hanger-pieces and transversely of the same, an elongated horizontal socket, or slot S, extending through its entire cross-dimension. This slot may be of any shape and measurable extent, consistent with the admission therein of and due engagement with said lower flanges a and a'. As indicated in the drawings, (Fig. 3) and as is preferred, the shape of said slot should conform to that of a cross-vertical section of the flange it is to engage. It should be of a size to be drawn over said flange to a tight fit, without contacting with the outer edge of the flange. At the lower end of said hanger-piece is a 105 like socket or slot S', similar in every respect to the slot S, save in its angular relation thereto in the block or piece H. This latter differentia, between said upper and lower slots, is indispensable and essential, in most 110
cases, inasmuch as the two beams that are respectively to occupy said slots and thereby be held together in the desired dependent relation, will rarely, in their said relation, be in the same upright plane. In consequence they will generally be at an angle with respect to each other when connected together by said hanger-pieces H, and said slots themselves, whereby said connection is effected, will, of course, in such cases, always be at a corresponding angle one with the other. It is accordingly further manifest that a complete coupling together, as described, of a supporting and a supported beam, like A and T, at an angle with each other, cannot be effected by the use of said hanger-pieces except as the latter, in turn, are each applied to and oppositely engage a flange of the upper and lower beam, and, in such engagement, are then firmly secured together. In other words, said hanger-pieces must be employed in sets of two pairs in every case, each member of which pairs engages a lower and upper flange of the beams to be connected on opposite sides of their webs, and are firmly bound or locked, in such position, by any suitable means. It will, of course, be apparent that each pair of hangers in a given set, must have slots which are arranged right and left as compared with the other pair of hangers which makes up the set. As an efficient manner of binding the hanger-pieces together in the several connective engagements with said beams described, bolt holes L are provided in each piece, immediately of said slots, through which bolts B may be passed in order to join and hold together the diagonally opposite members of each of said pairs composing a set of hanger-connections, against a premature displacement from their said engagements. In order to avoid interference the bolt-holes of one pair of a given set should be located at different points than in the other pair of said set. N, N indicate the nuts by which each diagonally opposite pair of hanger-connections may be drawn up on to said flanges and secured in such position. Although in the foregoing description I have shown a concrete embodiment of my invention, such mode of application, I wish it understood, may be varied in various respects without a departure from the idea intended to be claimed. Such variations would occur, for instance, if the weight and dimensions of the I-beams involved were unlike, or were not to be located in precisely parallel planes. So, too, it is obvious, that, broadly considered, the manner of securing the hanger-connections in their operative relations to the beams may be by any other suitable means than the cross-bolts shown and described.

What I claim and desire to secure by Letters Patent is:

1. A means for connecting an overhead I-beam tramrail to the lower flanges of a supporting I-beam above the same, consisting of a single piece of any suitable length and material provided with transverse slots, near the top and bottom thereof, of suitable shape, dimensions and angular relations with respect to each other, to fit, respectively, the upper flange of said tramrail and the lower flange of said supporting beam when applied to the same for the purpose, and a bolt hole at a suitable point on said piece between the slots, substantially as shown and described.

2. As a means for connecting an overhead I-beam tramrail to the lower flanges of a fixed I-beam above the same, consisting of the combination, with said lower flanges, and the upper flanges of the tramrail, at the angles of intersection of said beams projected, of hanger-connections in bearing engagement, severally, with both of said flanges within slots in the hanger-connections provided for the purpose, together with cross-bolts between the oppositely related of said connections when in their said engagement, substantially as shown and described.

3. As a means for connecting an overhead I-beam tramrail to the lower flanges of a fixed I-beam above, the combination, with said lower flanges and the upper flanges of the tramrail, at the angles of intersection of said beams projected, of oppositely related hanger-connections in bearing engagements with said flanges within slots in the connections provided for the purpose, together with suitable means of uniting together oppositely related pairs of said connections, when in their said engagements, against premature displacement therefrom, substantially as shown and described.

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In presence of—

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