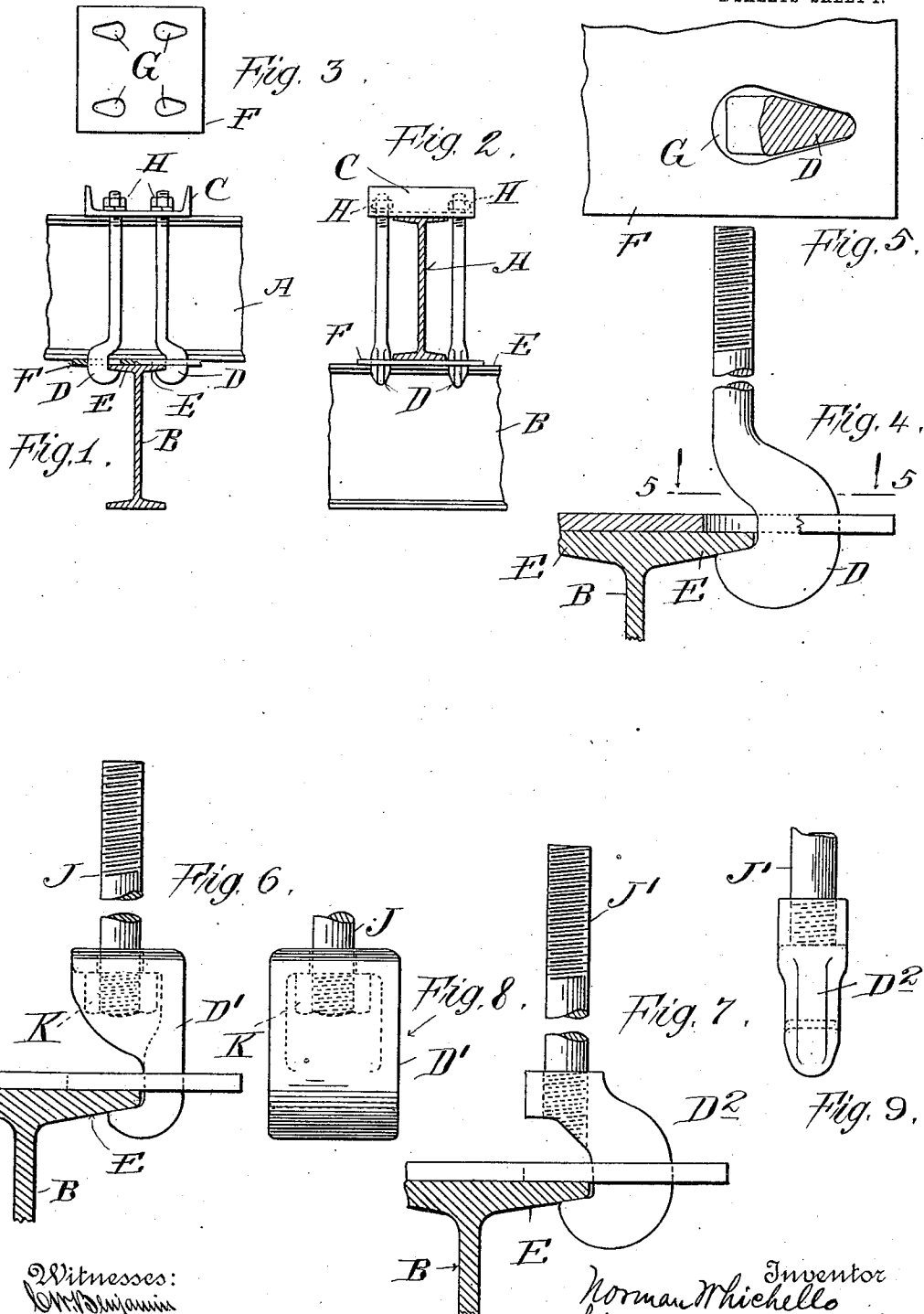


N. WHICHELLO.
SUPPORTING DEVICE FOR OVERHEAD TRACK RAILS.
APPLICATION FILED MAR. 22, 1912.

1,046,698.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



Witnesses:
Benjamin
Flouca M. Edelbolen.

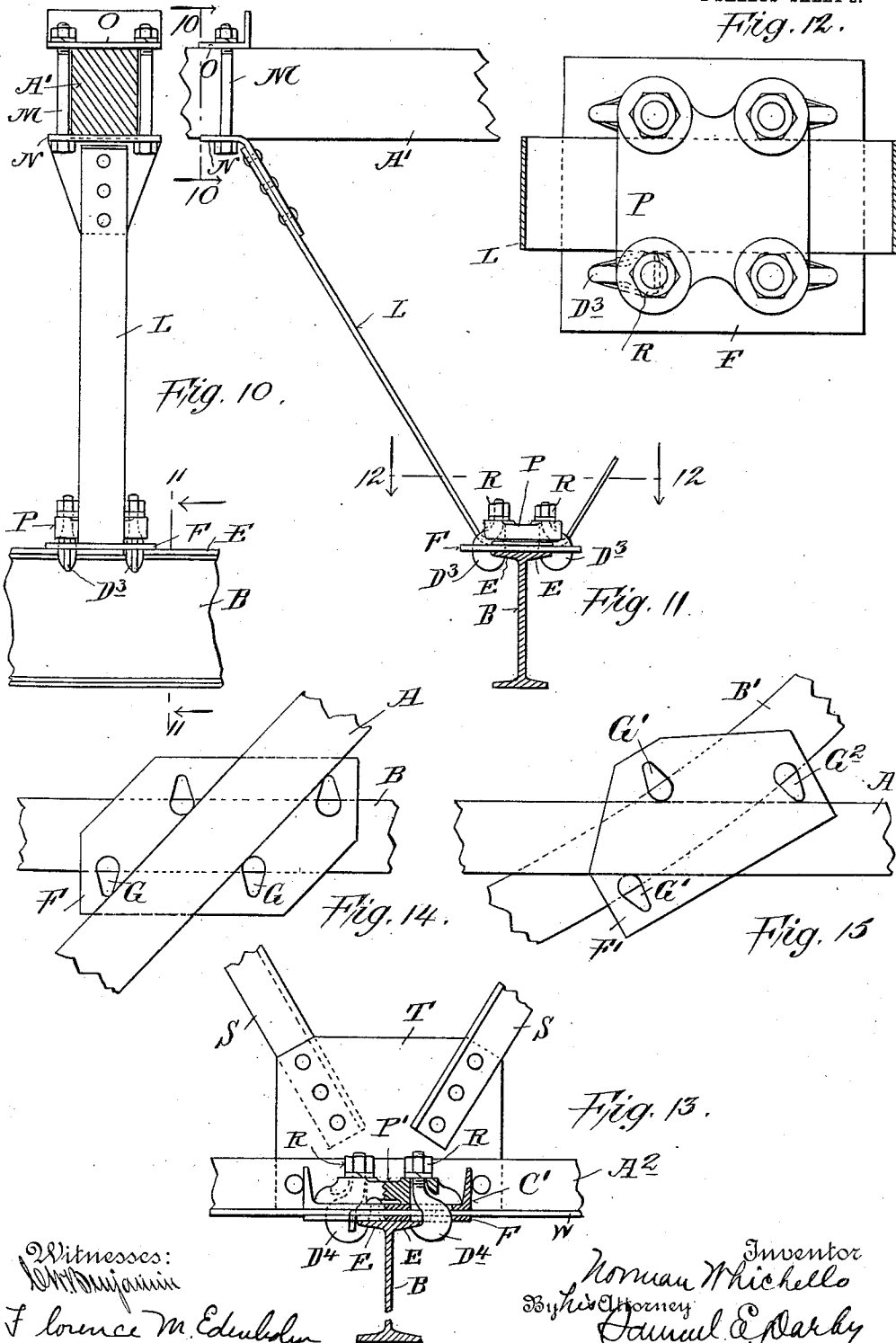
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UNITED STATES PATENT OFFICE.

NORMAN WHICHELO, OF MUSKEGON, MICHIGAN.

SUPPORTING DEVICE FOR OVERHEAD TRACK-RAILS.

1,046,698.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed March 22, 1912. Serial No. 685,541.

To all whom it may concern:

Be it known that I, NORMAN WHICHELO, a subject of the King of England, residing at Muskegon, county of Muskegon, State of Michigan, have made a certain new and useful Invention in Supporting Devices for Overhead Track-Rails, of which the following is a specification.

This invention relates to supporting devices for overhead track rails.

The object of the invention is to provide means for supporting overhead track rails, monorails or the like, which are simple, economical to manufacture, easy to apply, and efficient in use.

A further object is to provide supporting devices of the character and for the purpose set forth whereby the necessity is avoided for forming holes or other openings in the rail which is to be suspended or supported, to receive suspending or supporting bolts or other connections, and, also avoiding the necessity of providing such holes or openings at predetermined points in the track or beam members.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference signs appearing thereon, Figure 1 is a view showing one arrangement of devices for supporting or suspending a track rail from an overhead beam member, embodying my invention, the beam member being arranged in right angular relation to the rail member, and being shown in side elevation, while the rail member is in transverse section. Fig. 2 is a similar view of the same, the beam member being in transverse section and the rail member in elevation. Fig. 3 is a top plan of a tie plate employed in connection with my invention. Fig. 4 is a fragmentary view, parts in section, showing a track rail member, a tie plate and supporting hook bolt, in assembled relation. Fig. 5 is a view in section on the line 5, 5, Fig. 4, looking in the direction of the arrows. Figs. 6 and 7 are views similar to Fig. 4, showing other

forms of hook bolts well adapted for use in carrying out my invention. Figs. 8 and 9 are broken views in side elevation, respectively, of the hook bolts shown in Figs. 6 and 7. Fig. 10 is a view partly in elevation and partly in section on the line 10, 10, Fig. 11, looking in the direction of the arrows, showing a form of track rail supporting device as applied to a suspended member from an overhead beam. Fig. 11 is a similar view on the line 11, 11, Fig. 10, looking in the direction of the arrows. Fig. 12 is a view in section on the line 12, 12, Fig. 11, looking in the direction of the arrows. Fig. 13 is a view similar to Fig. 11, showing my invention applied to an arrangement for suspending or supporting the track rail from a roof truss. Figs. 14 and 15 are broken views in top plan, somewhat diagrammatic, showing the application of tie plates to different relation of rail and beam members, in accordance with my invention.

In constructions embodying the use of overhead or suspended track rails, monorails or the like, for the operation thereof of trucks, telfers or other forms of carriers, it has heretofore been a common practice to provide supporting or suspending fittings for the track rail member at predetermined locations or points along the length thereof, at which predetermined points or locations bolt or other holes or openings are formed through such rail to receive the bolts or studs or other connections by which the supporting fittings are secured to such track rail member. It has been customary, likewise, to provide the beam member, truss or strut from which the track rail is to be suspended, with bolt holes or openings for attachment thereto of the suspending fittings. This practice is objectionable, first, on account of the weakening of the supporting beam members involved in forming bolt holes or openings, therein; second, because of the labor and annoyance caused by forming the bolt holes or other openings; and, third, because of the difficulty in locating the bolt holes at the exact points where the fittings are to be applied, in advance of the erection of the track rail, or before delivery of the track rail to the place where it is to be erected. Where bolt holes or openings are to be formed in a supporting beam, truss or strut, already erect-

ed in a shed, warehouse, dock, wharf or the like, it is difficult and expensive to form the holes or openings therein.

It is among the special purposes of my present invention to avoid these objections, and to provide supporting and suspending devices which avoid the necessity for forming bolt holes or other openings in the supporting beam, truss or strut member, and to avoid the necessity for locating the supporting and suspending devices at any particular predetermined point.

In carrying out my invention I propose to provide suspending devices adapted to be secured to an overhead beam, strut or truss, and arranged to grip or engage underneath the upper flange of the track rail member to be supported or suspended, and which devices are capable of being readily applied at any desired point where the rail and beam members intersect or cross each other, and to be detached with equal facility, when desired, and which, when applied, are held against working loose or backing off from engaging relation with respect to the track rail or member to be suspended.

It is obvious that the specific structure or engaging fittings or devices embodying the principle of my invention may vary throughout a wide range without departure from the spirit and scope of my invention. While, therefore, I have shown and will now describe various specific forms of suspending fittings embodying my invention, I desire it to be understood that in its broadest scope, as defined in the claims, my invention is not to be limited or restricted to the exact form, construction and details shown and described.

In its essential features and characteristics my invention contemplates the use of engaging hooks or hook bolt members designed to engage underneath the upper flange of the track rail member, and a tie plate for retaining the hook bolt members in engaging relation, and means for supporting the hook bolt members from an overhead beam, strut or truss, of securing said hook bolt members to the overhead beam, roof, truss or strut member, without providing holes or openings in the beam, truss or strut member.

Referring to Figs. 1 and 2 and 3, A, designates an overhead beam, and B, a track rail member to be supported therefrom. A plate C, is placed across the beam member A, and through this plate, or the ends thereof which extend beyond the beam A, are passed the shanks of hook bolt members D. These hook bolt members extend downwardly alongside the supporting beam A, and the hook ends thereof engage underneath the upper flanges E, of the track rail B. A tie plate F, is interposed between the beam A, and rail B, and is provided with

openings G, therethrough, through which the hook ends D, project, said tie-plates serving to retain the hook bolts in engaged relation with reference to the flanges of the track member B. Nuts H, on the threaded ends of the shanks of the hook bolts serve to clamp the parts together. This affords an exceedingly simple and inexpensive and economical construction for suspending and supporting the track rail, which is easily applied and at any point in the length of the track rail where it crosses an overhead supporting beam.

In Figs. 6, 7, 8 and 9, I have shown somewhat modified hook bolts. In Figs. 6 and 8 the hook bolt member D', is formed separately from the threaded shank portion J the member forming the hook D', having an opening through which the shank J, passes. A nut K, carried by the end of the shank J, serves to secure the shank to the hook portion D'. In Figs. 7 and 9, I have shown a shank portion J', screwed into a socket formed in the hook member D².

In practice and preferably where the track rail crosses at right angles the overhead supporting beam from which said track rail is to be suspended, I prefer to employ four hook bolt members and arrange them in coöperating pairs one pair located on each side of the beam A, the members of each pair, respectively engaging flanges on opposite sides of the track rail member.

In Figs. 10, 11, and 12, I have shown my invention applied to the suspension of the track rail member from a hanger L, instead of directly from the beam A'. In this arrangement the hanger member L, is suspended at its upper end by means of bolts M, arranged on opposite sides of the beam A', and passing through plates N and O, respectively above and below the beam A'. The upper end of the member L, is riveted or otherwise secured to the plate N. In this arrangement the hook bolt member D³, engage underneath the flanges E, of the track rail, pass through the tie plate F, and their shanks extend through clamping members P, the tie plate F, and the clamp member P, being respectively arranged on opposite sides of the member L, as clearly shown, these parts being removably clamped together by nuts R.

In Fig. 13, I have shown an arrangement wherein the supporting beam A², forms part of a roof truss, is itself suspended by braces S, which are connected to a plate T, the latter being riveted or otherwise bolted to the supporting beam member A². In this case the track rail member B, is suspended from the flange W, of the beam A², by means of clamp bolts D⁴, engaging underneath the upper flanges E, of track rail member B, and extending through openings in plate F, interposed between flanges W,

and E, and also through openings in plate C', placed upon the upper surface of flange W, and also passing through clamp members P', these several parts being secured or clamped together by nuts R, on the threaded ends of the shanks of hook bolt members D⁴.

In the foregoing description I have referred to structures where the supporting beam and track rail members cross each other at substantially right angles. Occasions may arise where these members may be in angular relation to each other or, possibly, the track rail member may be curved. A construction embodying the principles of my invention is very well adapted for use in either of these situations. For instance, in Fig. 14 I have shown somewhat diagrammatically the arrangement of the supporting beam A, and the track rail B arranged in angular relation with a tie plate F, having the openings G, therethrough, arranged in proper relation for the hook bolts to pass therethrough into engaging relation with respect to the flanges of the rail member B.

In Fig. 15, I have shown a curved track rail member B' adjacent a supporting beam member A, with a tie plate F' and openings G' therein. It is obvious that in this arrangement only two hook bolts may be employed one arranged on each side of the supporting beam A, and respectively engaging underneath the flanges on opposite sides of the track rail. If desired, and in order to insure against lateral displacement of the tie plate and a consequent possibility of working loose or backing off of the supporting hook members, the tie-plate may be provided with an extra opening G², for an additional hook bolt, as clearly indicated in Fig. 15 of the drawing.

Having now set forth the object and nature of my invention and various constructions and arrangements embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is:—

1. In a means for suspending overhead flanged monorails or track rails, the combination with the flanged rail member to be suspended and a supporting member therefor, of hook bolts arranged to engage the flanges of the rail member, means for suspending the hook bolts from the supporting

member and a tie plate to maintain the hook bolts in engagement with the flanges of the rail member.

2. The combination with a flanged monorail or track rail member and a supporting member therefor, of hook bolts to engage around the edges of the rail member flanges, a tie plate to maintain the hook bolts in engaging relation with said flanges, and means embracing the supporting member for suspending the hook bolts therefrom.

3. The combination with a flanged monorail or track rail member and a supporting member therefor, hook bolts to engage around the edges of the track rail member, said hook bolts having shanks, a clamp member to embrace the supporting member and through which said shanks extend, and nuts for clamping the parts together.

4. The combination with a flanged monorail or track rail member and a supporting member therefor, of hook bolts to engage around the flange of the track rail member and provided with shanks, a clamp member to engage the supporting member, the shanks of the hook bolts arranged to pass through said clamp member, a tie plate through which the clamp bolts extend and operating to maintain the same in engaging relation with the rail member flange, and nuts for the hook bolt shanks to clamp the parts together.

5. The combination with a flanged monorail or track rail member and a supporting member therefor, of a tie plate arranged between the track rail member and the supporting member, said tie plate having openings therethrough, hook bolts extending through said tie plate openings and engaging around the flange of the track rail member, a clamping member engaging over the upper side of the supporting member, the shanks of the hook bolts extending through said clamping member, and means for clamping the parts together.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 13th day of March, A. D., 1912.

NORMAN WHICHELLO.

Witnesses:

HARRY SAWYER,
J. L. HAGA.