G. W. WHITEMAN.

RAIL SECURING MEANS.

APPLICATION FILED APR. 27, 1911.

1,025,104.

Patented Apr. 30, 1912.

2 SHEETS—SHEET 1.

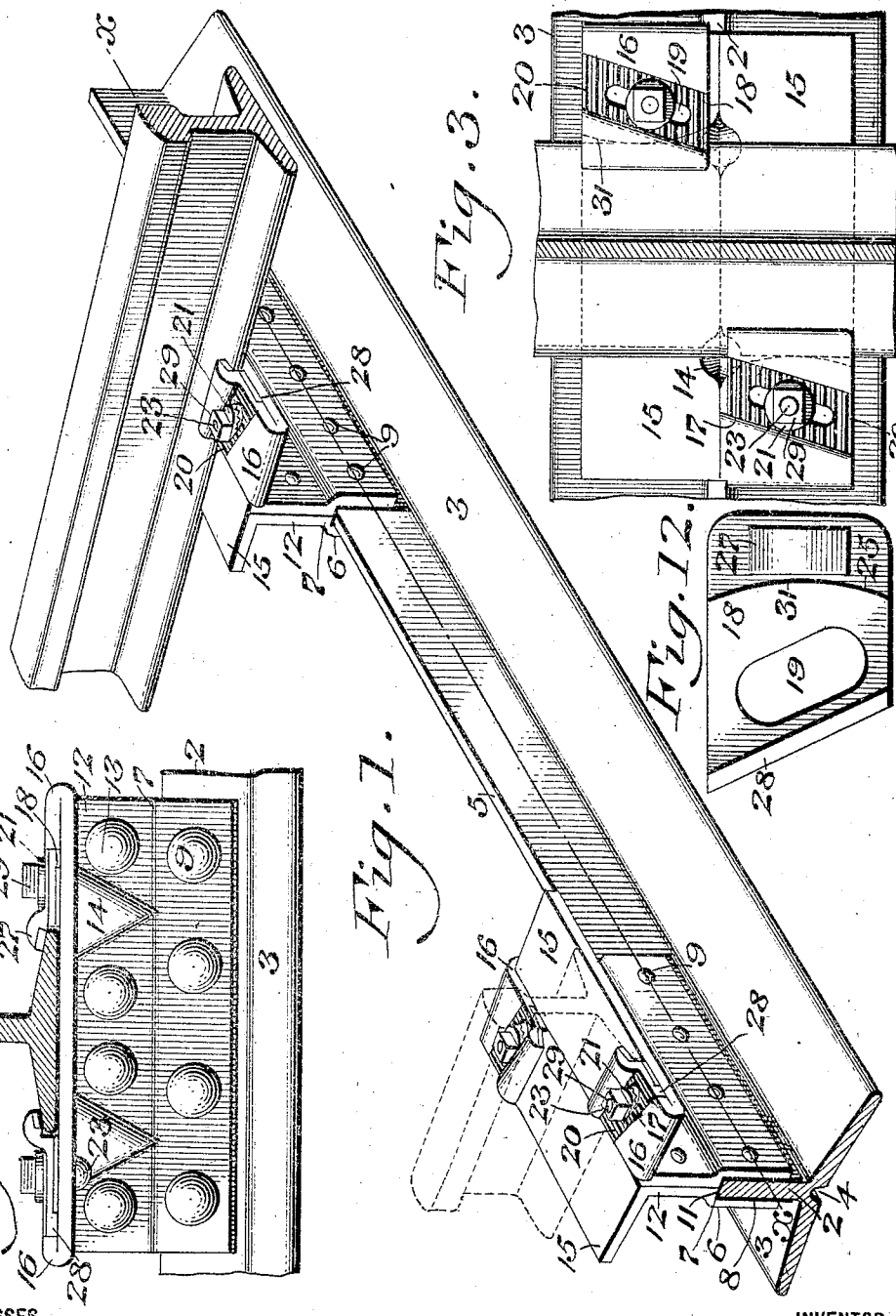

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 12.

WITNESSES

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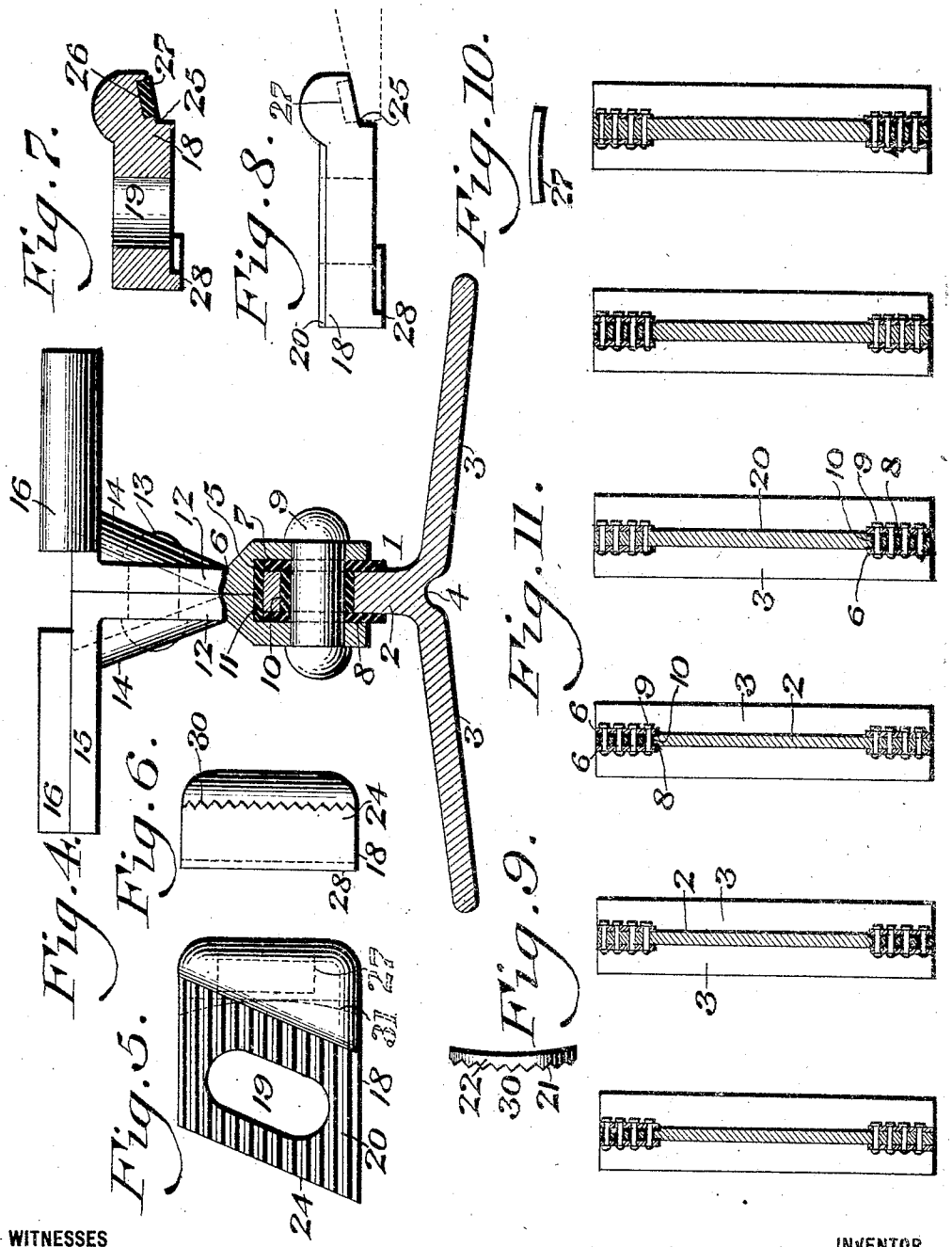

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UNITED STATES PATENT OFFICE.

GEORGE W. WHITEMAN, OF PHILADELPHIA, PENNSYLVANIA.

RAIL-SECURING MEANS.

1,025,104. Specification of Letters Patent. Patented Apr. 30, 1912.

Original application filed February 10, 1911, Serial No. 607,761. Divided and this application filed April 27, 1911. Serial No. 623,578.

To all whom it may concern:

Be it known that I, GEORGE W. WHITEMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Rail-Securing Means, of which the following is a specification.

My present invention relates to a novel construction of fastening means for securing the rails in assembled position.

In a co-pending application, filed by me on February 10th, 1911, Serial 607,761, which eventuated into Patent No. 995,748, dated June 20, 1911, and of which the present case is a division, I have described and broadly claimed a novel construction of a tie and my present invention, while especially adapted to be employed in conjunction with a tie such as is therein disclosed, is not limited to use with such a construction, but may be employed in conjunction with any desired type of tie having a web or projecting portion to which the chair is secured.

My present invention consists of a novel construction of supporting plates, and novel means coöperating therewith to secure the rails in position.

My invention further consists of a novel construction of a fastening clip and a novel construction of a resilient washer adapted to coöperate therewith.

My invention further consists of a novel manner of securing the rails in position and adapting the same to automatically adjust themselves in such a manner as to compensate for the wear without affecting the rigid fastening of the rails with respect to the supporting means.

My invention further consists of a novel construction of a fastening clip, in conjunction with which I employ a novel construction of a spring adapted to interlock therewith, said spring being adapted to engage with the rail flange, and thereby provide the necessary tightness when the clip is secured in position, and also compensate for slight wear and more readily allow the expansion of the rail on the chair.

My invention further consists of a novel clip constructed in such a manner that the expansion of the rail will not force it out of its normal position.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a perspective view of rail fastening means embodying my invention, the same being shown in assembled position with respect to a tie and a rail. Fig. 2 represents a sectional elevation of a portion of Fig. 1. Fig. 3 represents a plan view of Fig. 2. Fig. 4, represents a sectional elevation of a metallic tie and chair embodying my invention. Fig. 5 represents a plan view of one of the clip members. Fig. 6, represents a side elevation of a clip member. Fig. 7 represents a sectional elevation of Fig. 5. Fig. 8 represents a side elevation of Fig. 7 showing in dotted outline one of the base flanges of a rail. Fig. 9 represents an end elevation of one of the clip members. Fig. 10 represents an end elevation of the spring such as is shown in Figs. 7 and 8 but in detached position. Fig. 11 represents a sectional plan view on line x—x Fig. 1 showing a section of the track showing the manner in which the insulation may be placed with respect to the different ties and the rails. Fig. 12 represents a bottom plan view of the clip.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates a tie embodying my invention the same consisting in the present instance of a projecting web or flange 2 preferably centrally and vertically arranged from the lower end of which extends laterally and downwardly the base flanges 3, it being noted that the underside of the base flanges 3 from their extreme outer ends incline inwardly and upwardly to the depression or ballasting chamber 4 which latter provides a space in which the ballast is adapted to be seated and thereby tend to prevent any improper movement of

the tie with respect to the roadbed. The web 2 of the tie is preferably of uniform thickness throughout its length and is preferably provided with a flat upper face 5.

6 designates the rail supporting plates which form the chair, the inner faces of which at the lower ends are angularly deflected as at 7, thereby adapting the same to be seated on the web 2.

8 designates strips of insulation located on opposite sides of the web 2 of the tie and suitably apertured in order that the rivets 9 may pass therethrough, it being noted that a bushing 10 is provided surrounding the rivet 9 and a top layer of insulation 11 is provided which engages the upper face of the web. It will be seen that by such a construction, after the insulation has been placed in position as is indicated in Fig. 4, and the parts of the chair have been placed in position above the tie, the parts may be riveted together by means of the rivets 9 with the insulation in place and the insulation will be in compression and not subject to any abrasive action.

The chairs 6 are provided with an upward extension 12, of sufficient height to provide for the proper depth of ballast, the upward extensions 12 of two chairs being secured together by means of rivets or equivalent fastening devices 13. The extensions 12 are provided with ribs 14 extending in any desired manner in order to strengthen the device.

15 designates laterally extending portions of the chairs which, at one end are upwardly and laterally deflected as indicated at 16 and as most clearly seen in Figs. 1 and 3, it being noted that the inner face of said extensions are inclined as indicated at 17, the purpose of which will be hereinafter clearly set forth.

18 designates a rail fastening device or clip member which is provided with an aperture 19 preferably a slot as shown and the upper surface is serrated or indented as is indicated at 20, thereby adapting the same to interlock with a resilient washer 21 which is apertured as indicated at 22, thereby permitting the passage of a bolt 23 therethrough. The under face of the resilient washer 21 is curved and serrated or indented as indicated at 30. One side of the clip 18 is provided with an inclined face 24 which engages, when the parts are in assembled position, with the inclined face 17 of the chair. The side of the clip 18 opposite the face 24 is enlarged to form a boss the under side of which is angularly cut away as is indicated at 25 and is recessed as is indicated at 26, thereby adapting the same to receive resilient material 27, which in the present instance is shown as consisting of a spring which when the parts are in assembled position will contact with the base flange of the rail as is indicated in Fig. 8.

The face of the clip which engages the outside edge of the rail flange is made convex as indicated at 31 in order that the rails in expanding will not slue the clip out of its position.

The bottom of the clip 18 is provided with a rib or flange 28 as will be best understood by the reference to Figs. 1, 7 and 8 so that when the clip is seated on the laterally extending portion of the chair 15, the spring 27 will contact with the base flange of the rail, and since the bolt 23 passes through the clip intermediate the rib 28 and the angularly recessed portion 25 a strong pressure will be exerted against the base flange of the rail sufficient to maintain the rails in their proper position. The bolts 23 are provided with nuts 29.

The clip members operate in a manner somewhat similar to that disclosed in my former patents 828793, 828794, and 828795, granted to me August 14, 1906 wherein I have described and broadly claimed a clip mounted in such a manner as to provide for the lateral adjustment of the rails.

Attention is directed to the resilient washer 21 since by forming the same of resilient material I am enabled to dispense with the employment of nut locking devices. I also desire to call special attention to the novel form of tie, the upwardly projecting flange of which is of sufficient height to have the chair secured thereto but does not engage directly with the rail, and also to the ballasting chamber in alinement with such web.

The chair may be economically manufactured and provides maximum strength for minimum weight.

In so far as I am aware, I am the first in the art to devise rail securing means which include rail supporting plates, clamping clips, resilient washers and cushioning means between the clip and the rail, as herein disclosed, and it is to be understood that my claims to such features are to be interpreted with corresponding scope.

It is to be understood that the purpose of the spring 27 is not for the purpose of allowing relative movement of the rail with respect to the rail supporting plates, but the purpose and function of this spring is to compensate for wear between the rail flange and the fastening clip, so that as the wear occurs the same will be taken up by the action of the spring.

It will now be apparent that I have devised a novel and useful construction of rail securing means which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is

susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. The combination of rail supporting means having an abutment, a clip contacting with said abutment and overlying a rail flange and having a convex face engaging the edge of the rail, said clip having a recess therein, and a flat curved spring within said recess and contacting with the rail flange to compensate for wear between the rail flange and the clip, and fastening devices for said clip.

2. As a new article of manufacture, a clip having an aperture therethrough and having its underface angularly recessed for engagement with the rail, one wall of said recess having a convex face for engagement with the edge of the rail flange, and a flat spring located within the other wall of said recess for engagement with the top of the rail flange to compensate for wear between the rail flange and the clip.

3. The combination of rail supporting means having an abutment, a clip contacting with said abutment and overlying a rail flange and having a convex face engaging the edge of the rail, said clip having a recess therein extending longitudinally of the rail, a curved spring having its ends seated in said recess and its central portion contacting with the rail flange to compensate for wear between the rail and clip, a resilient washer interlocking with said clip, and fastening devices for securing the parts in assembled position.

4. The combination of rail supporting plates having vertical portions provided with reinforcing ribs and laterally extending rail supporting portions having abutments, of clips intermediate said abutments and the rail and having portions overlying the rail flange and provided with recesses in their under faces, a spring of curved formation having its end contained within said recess and engaging the rail flange, and means for securing said clips in position.

5. As a new article of manufacture, a clip having an angularly inclined rib at one side thereof and provided with a slot extending parallel with said side and having its other side angularly recessed, one wall of said recess forming a convex face, the other wall of said recess having a transversely extending recess therein, a flat curved spring having its ends contained within said recess, and its central portion extending slightly below the face of the recessed wall in which it is seated.

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Witnesses:
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