

Dec. 10, 1940.

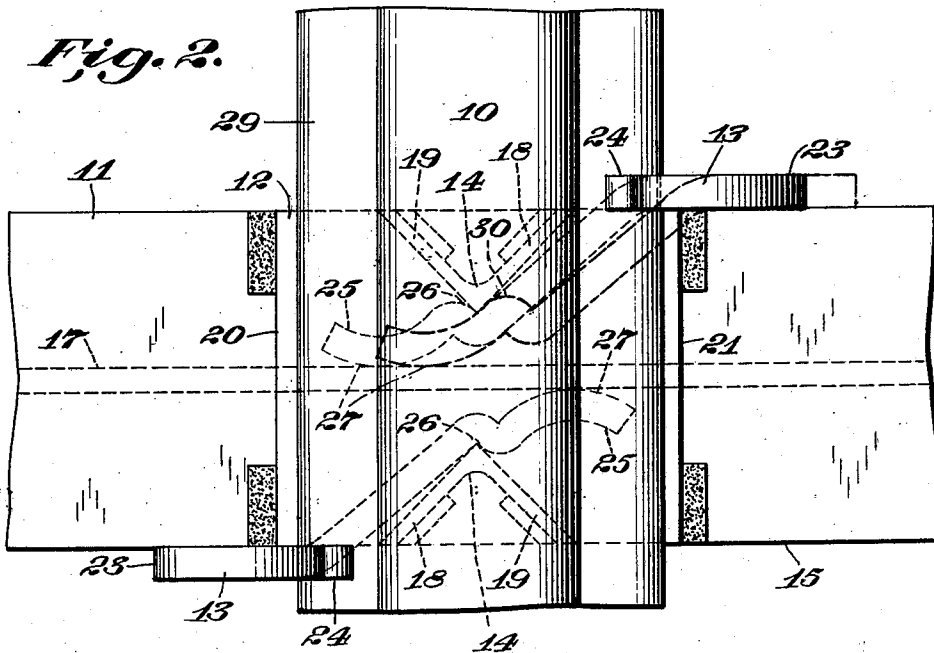
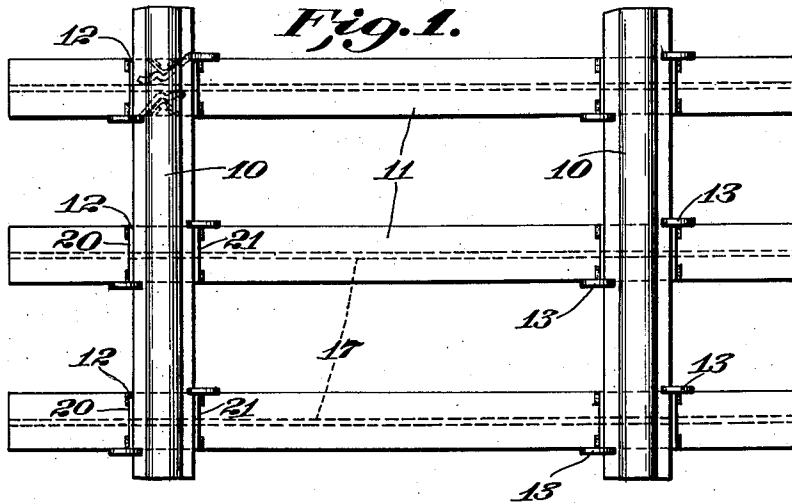
O. W. JOHNSON

2,224,731

RAILWAY TRACK STRUCTURE

Filed July 19, 1939

3 Sheets-Sheet 1



Inventor

O. W. Johnson.

By *R. S. C. Dougherty.*
Attorney

Dec. 10, 1940.

O. W. JOHNSON

2,224,731

RAILWAY TRACK STRUCTURE

Filed July 19, 1939

3 Sheets-Sheet 2

Fig. 3.

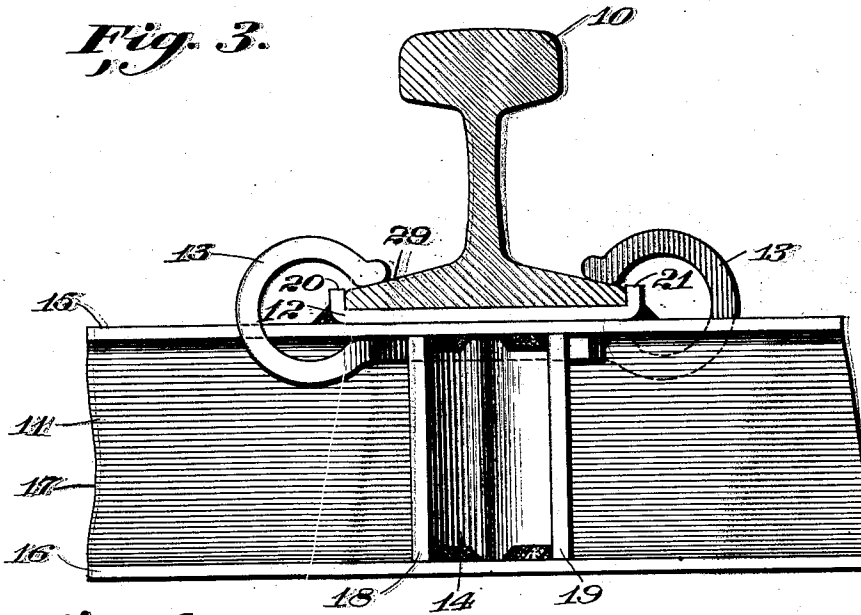
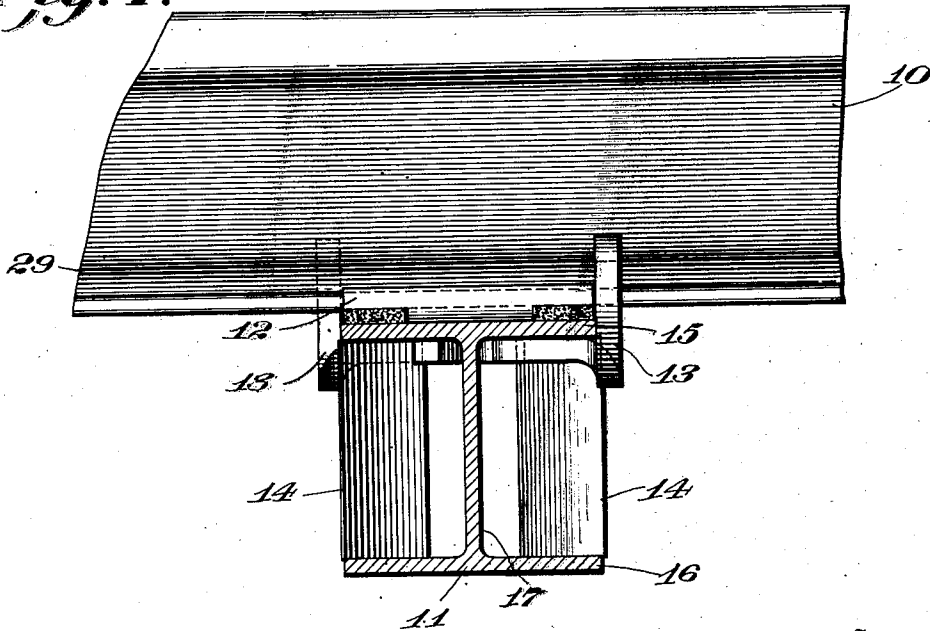


Fig. 4.



Inventor

O. W. Johnson.

By *R. S. Cougherty.*

Attorney

Dec. 10, 1940.

O. W. JOHNSON
RAILWAY TRACK STRUCTURE

2,224,731

Filed July 19, 1939

3 Sheets-Sheet 3

Fig. 5.

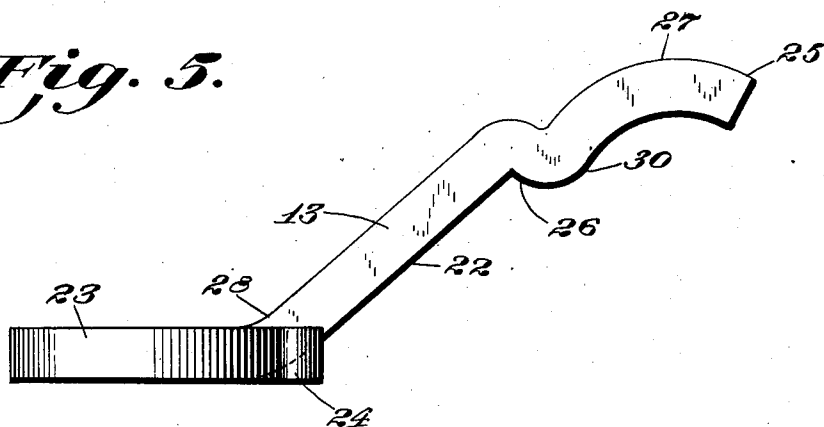
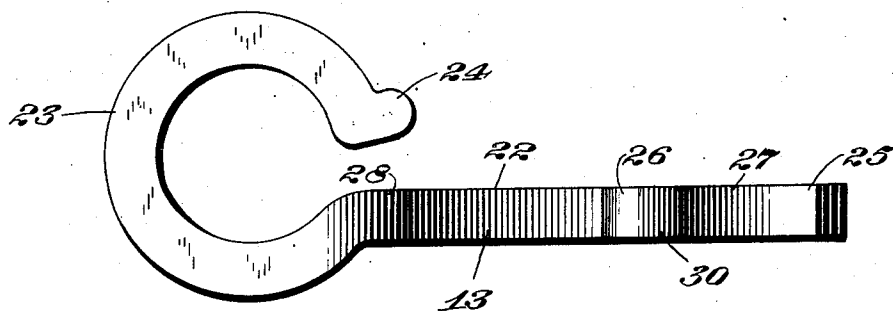


Fig. 6.



Inventor

O. W. Johnson.

By R. S. C. Dougherty.

Attorney

UNITED STATES PATENT OFFICE

2,224,731

RAILWAY TRACK STRUCTURE

Oliver W. Johnson, Bethlehem, Pa., assignor to
Bethlehem Steel Company, a corporation of
Pennsylvania

Application July 19, 1939, Serial No. 285,232

12 Claims. (Cl. 238—355)

My invention relates to railway track structures and particularly to means for fastening the rails to the ties.

One of the objects of my invention is to provide a novel clamp which effectively grips the rail and cooperates with a member of the road-bed of a railway track structure to limit the vertical movement of the rail thereon.

Another object of my invention is to provide a tie with a retaining member for a rail fastener which member also comprises a reinforcing member for the tie.

Another object of my invention is to provide a novel clamp and tie structure for a rail which can be easily assembled with the rail and also easily removed therefrom and which is ideally adapted for use in temporary track installations in industrial plants, freight yards, ore and quarry pits, and mines.

The novel features of my invention will be more fully understood from the following description and claims taken with the drawings, in which

Figure 1 is a plan view illustrating a track structure embodying my invention;

Fig. 2 is an enlarged plan view of my novel device;

Fig. 3 is a side elevation of the device shown in Fig. 2;

Fig. 4 is an end view of the device shown in Fig. 3;

Fig. 5 is a plan view of the clamp; and

Fig. 6 is a side view of the clamp.

Referring to the drawings, 10 designates a rail, 11 a cross tie, 12 a tie plate, and 13 the rail clamps.

The tie 11 comprises a member preferably of H or I beam formation, reinforced at the points which support the rails 10 by reinforcing members 14 disposed intermediate the flanges 15 and 16 of the tie and welded thereto. The members 14 shown in the drawings comprise angles having their apices spaced from the web 17 of the tie and each having legs 18 and 19 extending outwardly therefrom.

Tie plates 12 are preferably welded to ties 11 and provide seats for the rails 10. Shoulders 20 and 21 are provided on the tie plate 12 to prevent movement of the rail lengthwise of the tie.

The rails 10 are assembled with the ties 11 by placing the rails on the tie plate seats and then applying the clamps 13 thereto.

Each of the clamps 13, as shown in the drawings, comprises a body portion 22 provided at one end with a hook portion 23 having a rail engaging toe portion 24, and at its other end with a

sinuous portion 25, having a shoulder 26 to engage the member 14 and a resilient portion 27 to engage the web 17 of the tie 11. The body portion 22 of the clamp 13 is bent so as to be angularly disposed in relation to the hook portion 23 and so as to form curved portion 28. Curved portion 28 and toe portion 24 together form a pair of jaws to grip the rail 10 and the tie 11.

Clamp 13 is applied by placing the resilient portion 27 of the clamp between the web of the tie 11 and the angle 14 with the hook portion 23 of the clamp against the side of the flange of the tie. The clamp 13 is then moved longitudinally of the tie and the toe portion 24 is brought into engagement with the base flange 29 of the rail 10 and portion 30 of the clamp bears against leg 18 of pedestal angle 14 as shown in chain lines in Figure 2. The clamp 13 is then driven into its operative position by sharp blows of a hammer or other instrument on the hook portion 23 in the direction of the rail. As the clamp 13 is driven to its operative position the portion 30 passes over the apex of the angle 14 and the resilient portion 27 of the clamp engages the web of the tie 11 causing deformation of resilient portion 27 of the clamp. After the portion 30 of the clamp passes the apex of the angle the tendency of the resilient portion 27 of the clamp to return to its normal condition forces the portion 30 into engagement with leg 19 of the angle 14.

As the clamp is driven into its operative position as described above, the toe portion 24 of the hook portion 15 and the curved portion 28 exerts a gripping action between the flange 29 of the rail 10 and the flange 15 of the tie 11, respectively, the gripping action increasing as the clamp is driven further toward the rail.

It will thus be understood that I have devised a novel structure which permits the rails to be easily and effectively assembled with the ties and which at the same time will afford a resiliency therebetween.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit thereof and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

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

1. In combination with a rail, a tie, and a clamp securing said rail to said tie, said tie comprising a web and flanges, and a reenforcing member in spaced relation to said web intermediate said flanges, and said clamp comprising a hook portion in gripping relation with said tie and said rail, a shoulder portion positioned intermediate said web and said reinforcing member lockingly engaging said reinforcing member and a body portion connecting said hook portion and said shoulder portion.

2. In combination, a rail, a tie, and a clamp member fastening said rail to said tie, said tie comprising an upper and a lower flange, a web, and an angle member secured intermediate said flanges in spaced relation to said web and said clamp member comprising a rail engaging portion positioned at one side of the tie and having a portion extending from the rail engaging portion to a position intermediate said web and said angle and lockingly engaging said angle.

3. In combination, a rail, a tie, and a clamp member connecting said rail to said tie, said tie comprising an upper flange and a web extending transversely of the rail, a reenforcing member for said flange and having a portion thereof in spaced relation to said web, said clamp member comprising a hook portion, a rail gripping portion and a portion at one side of the tie and a shouldered under-rail portion connected to the hook portion and lockingly engaging said reinforcing member.

4. In combination, a rail, a tie, and a clamp member securing said rail to said tie, said tie comprising an upper flange a lower flange, and a web, an angle member secured intermediate said flanges and in spaced relation to said web, said angle having its apex positioned toward said web, said clamp member having a rail engaging portion positioned at the side of the tie and having an under-rail portion extending from the rail engaging portion lockingly engaging the apex of said angle.

5. In combination, a rail, a tie, and a clamp member securing said rail to said tie, said tie comprising an upper flange, a lower flange, and a web, an angle member intermediate said flanges and secured thereto in spaced relation to said web, said angle member having its apex positioned toward said web, said clamp member comprising a hook portion engaging the rail, a body portion extending from said hook portion toward said web, a shoulder portion engaging said apex

of said angle, and a spring portion engaging the web of said tie.

6. A tie comprising a member having a web and upper and lower flanges, and an angle member intermediate said flanges and secured thereto in spaced relation to said web, said angle member having its apex positioned toward said web and its legs positioned away from said web.

7. A clamp for fastening a rail to a tie, said clamp comprising a hook portion, a body portion extending from said hook portion in a plane oblique to the plane of said hook portion, and a sinuous portion at the end of said body portion opposite the said hook portion.

8. A clamp for fastening a rail to a tie, said clamp comprising a hook portion, a body portion extending from said hook portion in a plane oblique to the plane of said hook portion, a shoulder portion at the end of said body portion opposite the said hook portion, and a resilient portion adjacent the shoulder portion.

9. A railway track structure comprising a rail, a tie supporting said rail, and a device fastening said rail to said tie, said tie comprising a web and spaced flanges and a member disposed intermediate said flanges and in spaced relation to said web and said device comprising a resilient hook portion engaging the rail and a distorted body portion disposed intermediate the aforementioned member and the web of the tie.

10. A tie comprising a member having a web and upper and lower flanges, and a flanged reenforcing member intermediate said flanges and secured thereto in spaced relation to said web, said flanged reenforcing member having its flanges positioned away from said web.

11. A clamp for fastening a rail to a tie, said clamp comprising a rail gripping portion, an underrail portion extending from said rail gripping portion in a plane oblique to the plane of said rail gripping portion, and a sinuous locking portion at the end of said underrail portion opposite the said rail gripping portion.

12. A clamp for fastening a rail to a tie, said clamp comprising a rail gripping portion, an underrail portion extending from said rail gripping portion in a plane oblique to the plane of said gripping portion, a locking portion at the end of said underrail portion opposite the said rail gripping portion, and a resilient tie engaging portion adjacent the locking portion.

OLIVER W. JOHNSON.