H. G. WARR.

RAIL ANCHOR.

APPLICATION FILED AUG. 25, 1921.

1,415,744.

Patented May 9, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

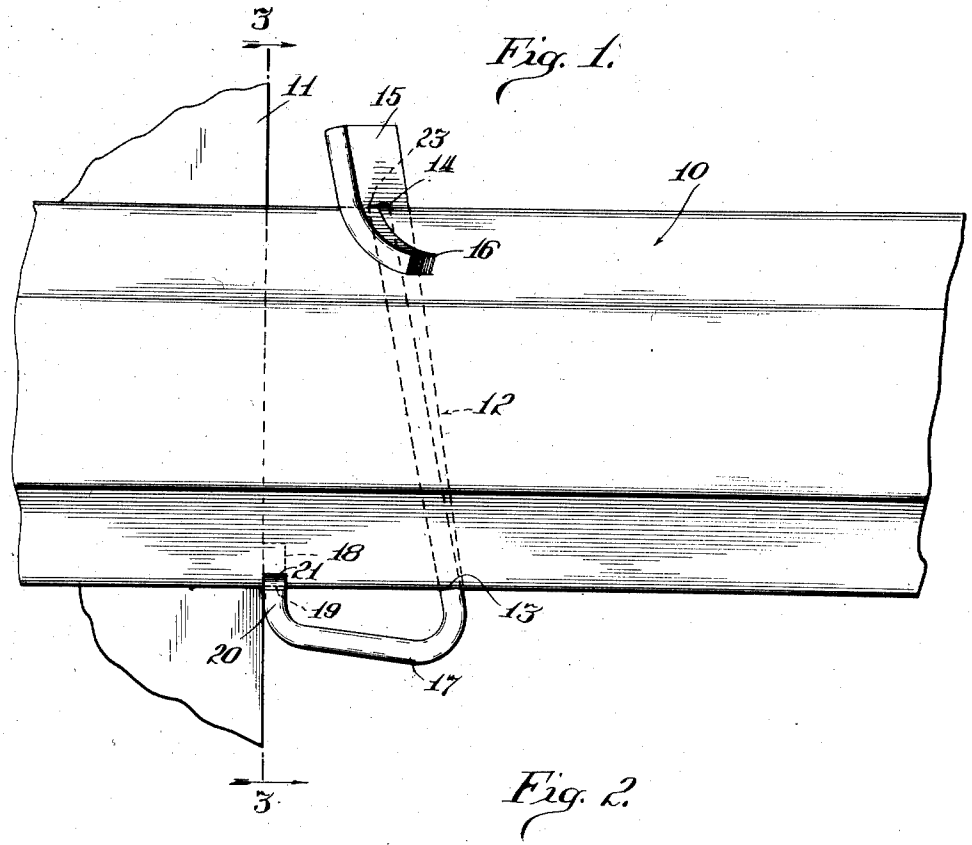
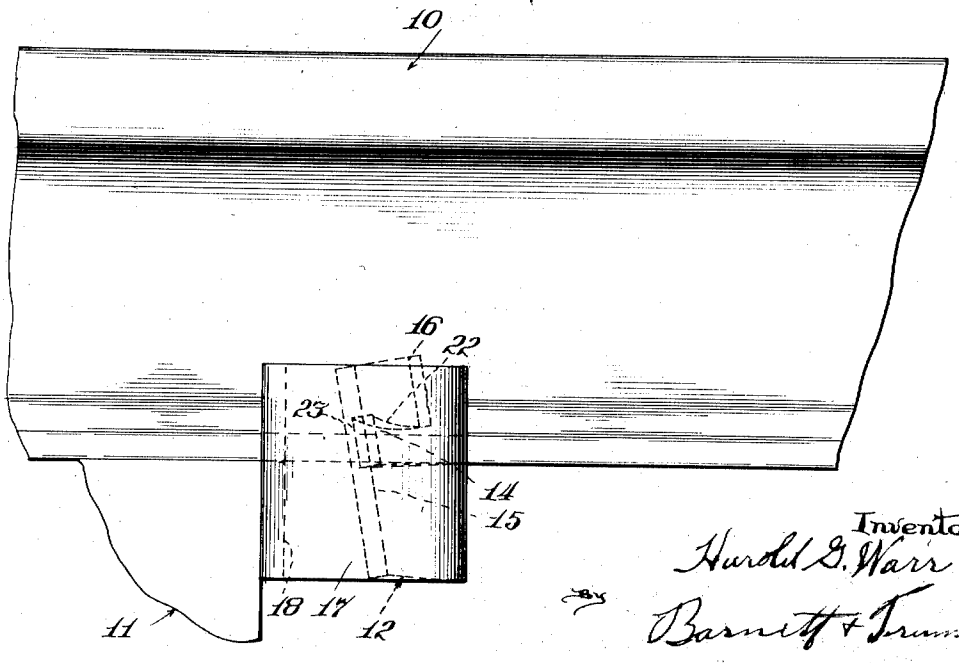


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

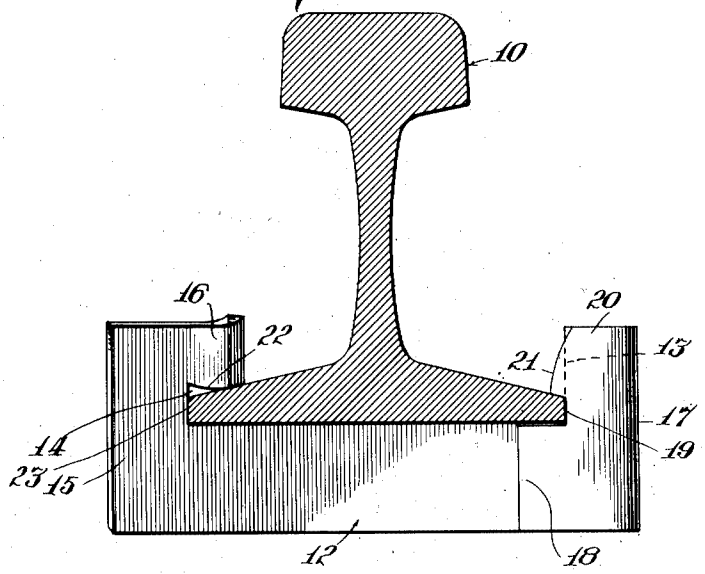


Fig. 4.

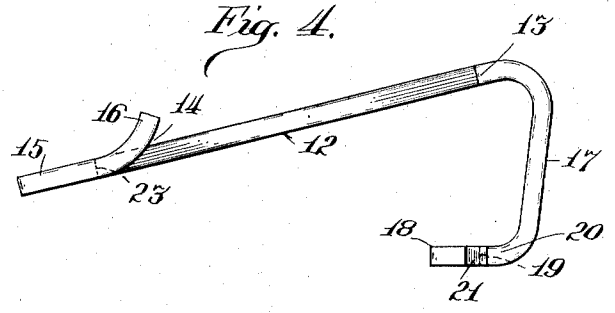


Fig. 5.

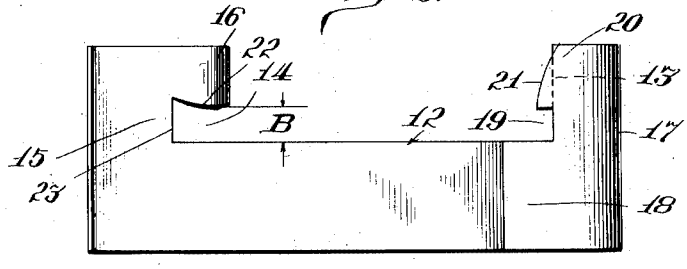
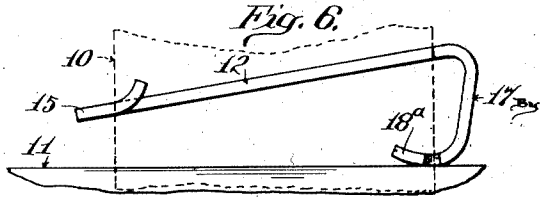


Fig. 6.



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UNITED STATES PATENT OFFICE.

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RAIL ANCHOR.

1,415,744. Specification of Letters Patent. Patented May 9, 1922.

Application filed August 25, 1921. Serial No. 495,387.

To all whom it may concern:

Be it known that I, HAROLD G. WARR, a citizen of the United States, residing at Park Ridge, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail Anchors, of which the following is a specification.

My invention relates to rail anchors, and has for its principal object the provision of an improved one-piece rail anchor having jaws for engaging opposite edges of a rail base with spring pressure, and adapted to take a firm shackle hold on the rail during the presence of creeping pressure on the rail.

A more specific object of the invention is to provide an improved one-piece anchor constructed so that its jaws are forced apart and the body of the device subjected to a tortional strain when the device is applied to and in its operative position on a rail. In this connection, the invention contemplates an anchor having a normally flat body portion and a jaw portion which is so formed that the anchor, during its application to the rail, is subjected to a twisting strain and thereby exerts spring pressure against the upper and lower surfaces of the rail base.

The invention consists in the provision of a new and improved one-piece anchor constructed as hereinafter described and claimed, for carrying out the above stated objects and such other objects as will appear from the following description.

The invention is illustrated in a preferred embodiment in the accompanying drawings, wherein—

Fig. 1 is a plan view of the rail anchor constructed in accordance with my invention, applied in its operative position on the base flange of a railroad rail.

Fig. 2 is an end view of the anchor shown in Fig. 1, showing the same in its operative position on the rail;

Fig. 3 is a view partly in section, taken on line 3—3 of Fig. 1, looking in the direction indicated by the arrows;

Fig. 4 is a plan view of the device, showing its normal configuration when free of the rail.

Fig. 5 is a side view of the device shown in Fig. 4, and

Fig. 6 is a plan view of a modified form of device.

Like characters of reference designate like parts in the several figures of the drawings.

In the drawings, 10 designates a railroad rail, and 11 one of the cross-ties on which the rail is supported.

The rail anchor consists of a flat piece of metal, cut away as indicated at 12, to provide an upstanding shoulder 13 adapted to bear against one of the vertical edges of the rail base and a notch 14 providing a jaw portion 15 having an angularly disposed lip 16 adapted to fit over the other edge of the rail base. The other end of the device is formed with a return bent portion 17 which extends forwardly toward the tie, and terminates in a flat portion adapted to abut against one of the vertical faces of the tie 11. The vertical edge of the tie-abutting portion 18 is recessed as indicated at 19, to provide a jaw adapted to fit over the edge of the rail base at a point adjacent the tie. The portion 20 of the jaw above the recess 19 is beveled as shown at 21, to facilitate the application of the device to the rail, as will be hereinafter described. The device is made so that the effective distance between the jaws 15 and 19, when the device is free of the rail, is less than the distance which the device has to span when being applied to or in operative position on the rail. In other words, in applying the anchor, the jaws 15 and 19 have to be forced away from each other. The engagement of the anchor with the rail base preferably also is such that the body of the anchor is under tortional strain when applied to the rail. To accomplish this, the notch 14 is formed so that the dimension indicated at B will be less than the thickness of the rail base at the point engaged by the lip when the device is in its operative position.

In the drawings, it will be seen that the lower edge 22 of the lip 16 inclines downwardly toward the rail base. In order to compensate for the difference in the vertical dimension B and the thickness of the rail base at the point engaged by the lower edge of the lip 16, the lip 16 is bent backwardly so that the effective distance between the upper edge of the bottom portion of the

anchor and the edge of the lip 16 is increased by tilting the anchor on a substantially horizontal axis. When the device is tilted in the above manner, the vertical edge 23 of the notch 14 may be brought into contact with the vertical edge of the rail base. Under this condition the jaw 19 will be out of line with the opposite edge of the rail base; that is to say, below the same. In order to bring the jaw 19 into operative engagement with the rail base, it is necessary to twist or strain the anchor. During this operation the beveled edge 21 rides over the edge of the rail base until the latter enters the recess 19 of the return bent portion of the anchor.

It will be seen that the device, as described above, will hold the rail against creeping forwardly, that is, in the direction from the anchor toward the tie 11. By forming the anchor so that the jaws 15 and 19 have to be spread apart, and the body portion of the anchor subjected to a tortional strain when the device is in its operative position, the device will take a firm spring grip on the rail, so as to resist the tendency of vibration, or other disturbing influences, from loosening its hold on the rail. The anchor, however, will permit the rail to move in the opposite direction without carrying the anchor with it, and this is desirable because the rearward movement of the anchor is likely to be interfered with by the ballast. The tie abutting portion 18 is preferably made relatively short so as to confine its engagement with the tie to a point near the edge of the rail base. With this construction the anchor may assume different diagonal positions without effecting a substantial change in its point of contact with the tie.

In Fig. 6 I have shown a modified construction in which the tie abutting portion 18^a is curved backwardly from the tie so that the abutment will bear at the same point on the tie regardless of the particular diagonal position assumed by the body portion of the anchor. In other respects, this anchor may be made the same as that shown in Figs. 1 to 5 inclusive.

This application is a continuation in part of my co-pending application Serial No. 449,077, filed March 2, 1921, as a renewal of my application Serial No. 295,555 filed May 8, 1919.

I claim:

1. A one-piece rail anchor recessed at one end and formed with a rearwardly projecting lip to engage the base of the rail at one side thereof, the open end of the recess being narrower than the thickness of the rail base at the place where the lip engages the same when the anchor is in its operative position, a return bent portion at the other end formed with a rail base abutment and terminating in a recessed part to engage the edge of the rail and bear against a tie, the return bent portion being formed above its recess with a beveled surface, for the purpose described.

2. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw for engaging one edge of a rail base, at the other end with a return bent portion adapted to abut against a tie and provide a jaw for engaging the other edge of said rail base, and a web portion between said jaws which is normally flat when the anchor is free of the rail and is subjected to a tortional strain when the anchor is applied to a rail.

3. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw for engaging one edge of a rail base, at the other end with a rail base abutment and with a return bent portion adapted to bear against a tie and provide a jaw for engaging the other edge of said rail base, and a web portion between said first mentioned jaw and said rail base abutment which is normally flat when the anchor is free of the rail and is subjected to a twisting strain when the anchor is applied to a rail.

4. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw for engaging one edge of a rail base, at the other end with a return bent portion adapted to bear against a tie, and recessed to provide a jaw for engaging the opposite edge of the rail, and a web portion between said jaws which is normally flat when the anchor is free of the rail and is twisted when the anchor is applied to a rail; said jaws being arranged so that they are forced apart when the anchor is applied and in its operative position on a rail.

5. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw for engaging one edge of a rail base, at the other end with a return bent portion adapted to bear against a tie and recessed at its extremity to provide a jaw for engaging the opposite edge of a rail, and a web portion between said jaws which is normally flat when the anchor is free of the rail and is twisted when the anchor is applied thereto; said jaws being arranged so that they are forced apart when the anchor is applied to and in its operative position on a rail and the extremity of said return bent portion being formed above the recess formed therein with a beveled surface, for the purpose described.

6. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw having a lip extending obliquely to the body of said member adapted to engage the upper surface of a rail base flange at one side of a rail, at the other end with

a return bent portion recessed to provide a jaw for engaging the rail base flange at the other side of the rail, and a web portion intervening between said jaws adapted to engage the under surface of said rail; said obliquely disposed lip being formed so that the vertical distance between the inner lower edge thereof and the upper edge of said web is less than the thickness of the rail base flange at the point engaged by said lip.

7. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw having a lip extending obliquely to the body of said member adapted to engage the upper surface of a rail base flange at one side of a rail, at the other end with a return bent portion recessed to provide a jaw for engaging the rail base flange at the other side of the rail, and a web portion intervening between said jaws adapted to engage the under surface of said rail; said obliquely disposed lip being formed so that the vertical distance between the inner lower edge thereof and the upper edge of said web is less than the thickness of the rail base flange at the point engaged by said lip and said jaws being arranged so that they are forced apart when the device is applied to a rail.

8. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw having a backwardly turned lip adapted to engage the upper surface of a rail base flange at one side of a rail, at the other end with a shoulder for engaging the vertical edge of the rail base flange at the other side of the rail, and with a return bent portion adapted to bear against a tie and having its extremity recessed to provide a jaw for engaging the said rail base at a point adjacent said jaw, and a web portion intervening between said shoulder and said first mentioned jaw adapted to engage the under surface of said rail; said obliquely disposed lip being formed so that the vertical distance between the inner lower edge and the upper edge of said web is less than the thickness of the rail base flange at the point engaged by said lip.

9. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw having a backwardly turned lip adapted to engage the upper surface of a rail base flange at one side of a rail, at the other end with a shoulder for engaging the vertical edge of a rail base flange, at the other side of the rail, and with a return bent portion adapted to bear against a tie, and having its extremity recessed to provide a jaw for engaging the said rail base at a point adjacent a tie, and a web portion intervening between said shoulder and said first-mentioned jaw adapted to engage the under surface of said rail, said back-turned lip being formed so that the vertical distance between the inner lower edge thereof and the upper edge of said web is less than the thickness of the rail base at the point engaged by said lip, and said jaws being arranged so that they are forced apart when the anchor is applied to and in its operative position on a rail.

10. A one-piece rail anchor comprising a spring metal member formed at one end with a jaw having a backwardly turned lip adapted to engage the upper surface of a rail base flange at one side of a rail, at the other end with a shoulder for engaging the vertical edge of the rail base at the other side of the rail and with a return bent portion adapted to bear against a tie and having its extremity recessed to provide a jaw for engaging the said rail base at a point adjacent said tie, and a web portion intervening between said shoulder and said first-mentioned jaw which is normally flat when the device is free of the rail and is adapted to bear against the under surface of said rail; said backwardly turned lip being formed so that the vertical distance between the inner lower edge thereof and the upper edge of said web is less than the thickness of the rail base at the point engaged by said lip and the jaws being arranged so that the said flat web is subjected to a twisting strain when the device is applied to a rail.

11. A one-piece rail anchor consisting of a bar formed to extend diagonally across the rail base provided at one end with a jaw for engaging one edge of said base and at the other end with a return bent portion terminating in means for engaging the other elge of said base and for bearing against a tie; said tie engaging portion being curved backwardly from the tie so as to confine its engagement with said tie to a point adjacent the edge of the rail base.

HAROLD G. WARR.