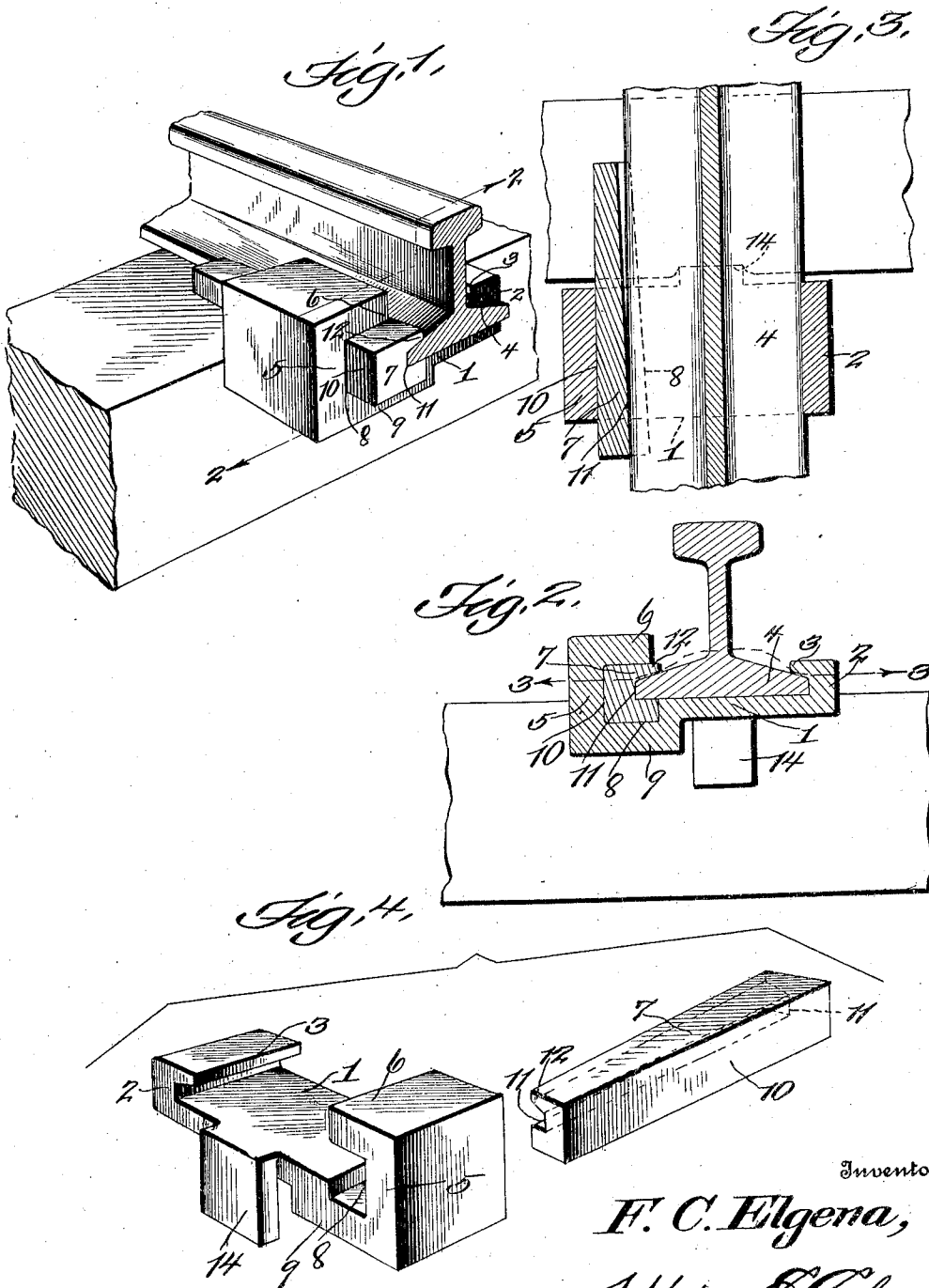


F. C. ELGENA.
RAIL ANCHOR.
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RAIL-ANCHOR.

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To all whom it may concern:

Be it known that I, FRED C. ELGENA, a citizen of the United States, residing at Thompson, in the county of Susquehanna and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Anchors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to an improved rail anchor and an object is to provide a simple, efficient, practical and novel device of this kind capable of being cheaply manufactured and sold at a reasonable profit.

Another object is to provide a device wherein the base of the anchor extends under the rail base and has a grooved or overhanging part at one end to engage one side of the base of the rail, in combination with a grooved wedge to engage an overhanging part of the other end of the base, whereby the groove of the wedge may engage the opposite side of the rail base, to anchor the rail securely in position.

Still another object is to provide an anchor including an anchor base provided with a depending shoe, to abut the tie at a point directly under the base of the rail in the center thereof, so as to insure holding the anchor in position.

A further object consists in arranging the shoe on the base of the anchor in such wise relatively to the insertion of the wedge, that when the wedge is driven in place to engage with one of the over-hanging parts of the base of the anchor, the shoe will be driven closely in engagement with the tie and act to prevent displacement of the anchor.

A still further object embodies the provision of an anchor which is simple to arrange in position and take off and also can be made as heavy or as light as it is deemed necessary and also consists of only two parts, the base of the anchor with the overhanging end, and the wedge.

While the design and construction at present illustrated and set forth is deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible of changes, and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features and combination of parts, as will be herein-

after set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a view in perspective of the improved rail anchor constructed in accordance with the invention, and shown as applied to a rail and a tie.

Fig. 2 is a sectional view on line 2—2 of Fig. 1,

Fig. 3 is a horizontal sectional view on line 3—3 of Fig. 2;

Fig. 4 is a detail view of the anchor and the wedge detached, from the rail and tie, with the wedge separated from the anchor.

Referring more especially to the drawings, 1 designates the base of the rail anchor which is constructed of any suitable metal preferably steel or the like, and may be any suitable shape in cross section, and of any length. One end of the base of the anchor has an upstanding part or flange 2 which terminates in an over-hanging extension flange 3, disposed in a plane to overhang the edge portion of the rail base 4. In other words, the upstanding part of the end of the base may be termed as a groove portion in the groove of which or under the over-hanging part 3, the edge of the base of the rail engages.

The other end of the base 1 of the anchor also has an upstanding part 5 terminating in an extension flange 6, which overlies the holding wedge 7. The base 1 at one end thereof in a plane below the overhanging extension flange 6 is downwardly cut or provided with a groove 8. One side of this groove or downwardly cut portion of the base 1 constitutes one side of the upstanding part 5 while the other side of the groove or downwardly cut portion is angularly disposed relatively to the vertical inner face of the upstanding part 5 so as to be engaged by one of the inclined edges of the wedge 7. In order to permit the formation of the groove 8, the base 1 of the anchor near one end may be enlarged, as shown, or cast with an extension 9 on the under face in order to reinforce the anchor at one end thereof.

The wedge 7 comprises a body, which may be any suitable shape in cross section preferably as shown, and one edge 10 thereof is constructed in a vertical plane as well as in a plane parallel to the edge of the base of the rail so as to engage the vertical inner face of the upstanding part 5 of the base 1 of the anchor, whereby the face 10 of the

wedge may contact frictionally with the face of the upstanding part 5 and thereby hold the wedge in position. The inner face of the wedge is grooved as shown at 11 to receive one edge of the rail base. The flange 12 of the wedge which is caused to be formed by the groove 11 has its under face inclined correspondingly to the upper surface of the base of the rail in order to overlie the same and engage the rail. It will be noted that the wedge 7 has one face inclined or constructed on an angle to the face 10 so as to cooperate with the inclined side of the groove 8 thereby causing the wedge to bind frictionally in position and hold the rail base rigid.

The base of the anchor has on one edge a downwardly depending shoe which is arranged centrally between the ends of the anchor and is designed to assume a position directly under the center of the rail base. This abutment shoe is positioned transversely of the rail, and is designed to be engaged by the ballast around the tie and under the base of the rail. This abutment shoe 14 prevents displacement of the anchor even though the wedge is not forced to an extreme wedging position owing to its engagement with the ballast of the road.

Furthermore, the abutment shoe depends from one edge of the base of the anchor at a point substantially diagonally opposite the larger end of the wedge, so that the tighter the wedge is driven home, the more secure the anchor is held in place. In other words, owing to the abutment shoe being diagonally opposite the larger end of the wedge, the tighter the shoe engages the tie and hence preventing a displacement of the anchor. For instance, as the hammer blows are imparted on the larger end of the wedge, the tighter the abutment shoe is forced against the tie. Also by constructing the bottom of the groove 11 on an inclined plane relatively to the face 10 of the wedge and relatively to the outer edge of the base of the rail, only a portion of the bottom of the groove will bind against the outer edge of the base of the rail, thereby attaining a more secure frictional or binding contact with the edge of the rail base. Owing to the frictional or binding action of one end of the bottom of the groove being to one side of the center of the anchor, the transverse pull on the anchor will cause the anchor to bind slightly angularly on the rail base, and the end of the base 1 to pull directly on the edge of the rail base, the angle of the wedge being exaggerated so as to indicate the binding of the wedge of the anchor.

As previously stated, the bottom of the groove of the wedge is inclined substantially correspondingly to the inclined face of the wedge. In other words correspond-

ingly to the incline of the edges of the flanges above and below the groove. However, the inclination of the bottom of the groove of the wedge is slightly less than the incline of the edges of the flanges above and below the groove and furthermore only a portion of the inclined bottom 11 of the groove engages the edge of the rail base, namely at one end of the groove adjacent the larger end of the wedge, and this engagement occurs a little before the inclined edge of the flange below the groove engages the inclined wall of the groove of the base of the rail anchor, thereby acting to hold the wedge securely in position and at the same time prevent longitudinal movement of the rail. While this action is true it is to be understood that the inclined edges of the flanges above and below the groove 11 are exaggerated as shown in dotted lines in Fig. 3 but in reality they are designed to be slight, so that the wedge may be driven into the groove of the anchor base to a considerable degree. In other words, the greater the number of hammer blows imparted on the wedge, the farther the wedge may be driven into the groove of the anchor base and each time the wedge receives a hammer blow, a movement will be imparted to the wedge and the tighter it will wedge into position. At the same time, the groove of the wedge will also wedge in engagement with the edge of the rail base.

Furthermore the tighter the wedge may be forced in position, the tighter the other end of the base of the anchor can be brought in contact with the opposite edge of the rail base. Furthermore, owing to the base of the anchor being spaced from the tie, by the provision of the abutment shoe 14 the anchor will tend to assume an angular position relatively to the rail as the hammer blows are imparted upon the wedge. This angular position of the anchor may not be perceptible to the eye, nevertheless such action exists, therefore the anchor will be held securely in position on the rail.

While the inclined edge of the wedge is adapted to engage the full length of the inclined wall of the groove of the anchor base, and in a sense act as a stop to limit the position of the wedge, it is to be understood that such inclined engaging portions of the wedge and the wall of the groove of the anchor base are so slight that the wedge is capable of having a progressive wedging action incident to successive hammer blows on the wedge.

The invention having been set forth, what is claimed as new and useful is:—

1. In a rail anchor, an anchor base having means at one end to engage the edge of the base of the rail, the other end of the base of the anchor having a downwardly cut portion or groove, one wall thereof being con-

5 constructed on a plane angularly disposed relatively to one edge of the rail base, the end of the base of the anchor adjacent the groove having an upstanding portion terminating in an extension flange, overlying a wedge, and a wedge engaging said groove under said overlying extension, and having a groove on its inner face to receive one edge of the rail base, thereby not only anchoring the rail in position but also binding the anchor in place, the bottom of the last mentioned groove being constructed on a plane angularly inclined relatively to the adjacent edge of the rail base, whereby but one end of the inclined or angularly disposed part of the wedge may engage and frictionally bind upon the edge of the rail base.

2. In a rail anchor, an anchor base having means at one end to engage the edge of the base of the rail, the other end of the base of the anchor having a downwardly cut portion or groove, one wall thereof being constructed on a plane angularly disposed relatively to one edge of the rail base, the end of the base of the anchor adjacent the groove having an upstanding portion terminating in an extension flange, overlying a wedge, and a wedge engaging said groove under said overlying extension, and having a groove on its inner face to receive one edge of the rail base, thereby not only anchoring the rail in position but also binding the anchor in place, the bottom of the groove being constructed on a plane angularly inclined relatively to the adjacent edge of the rail base, whereby but one end of the inclined or angularly disposed part of the wedge may engage and frictionally bind upon the edge of the rail base, one edge of the anchor base having a depending abutment shoe to assume a position directly under the center of the rail base, said abutment shoe being disposed diagonally opposite the larger end of the wedge, whereby as the hammer blows are imparted upon the larger end of the wedge, the tighter the abutment shoe will engage the tie.

3. In a rail anchor, an anchor base having means at one end to engage the edge of the base of the rail, the other end of the base of the anchor having a grooved bottom and

an extension adjacent said grooved bottom over-hanging a portion of the opposite side of the rail base, said grooved bottom being positioned partially under one side of the rail base and the wall of said groove under the rail base being inclined, a wedge engaging said grooved bottom and having its inclined portion engaging the full length of the inclined wall of the grooved bottom, said wedge having an inclined surface, a portion of which is adapted to wedge in contact with the edge of the rail base, prior to the wedging action of the wedge with the inclined wall of the grooved bottom of the anchor base.

4. In a rail anchor, an anchor base having means at one end to engage one edge of the rail base, the other end of the anchor base having an extension, said extension having a groove, one wall thereof being inclined, a grooved wedge engaging the inclined wall of the groove of the anchor base, said wedge having an additional inclined face, a portion of which is adapted to engage the edge of the rail base prior to the engagement of the wedge with the inclined wall of the groove of the anchor base.

5. In a rail anchor, an anchor base having means at one end to engage one edge of the rail base, the other end of the anchor base having an extension, said extension having a groove, one wall thereof being inclined, a grooved wedge engaging the inclined wall of the groove of the anchor base, said wedge having an additional inclined face, a portion of which is adapted to engage the wedge of the rail base prior to the engagement of the wedge with the inclined wall of the groove of the anchor base, said wedging action of the wedge with the inclined wall of the groove of the anchor base being adapted to be progressive incident to successive hammer blows on the wedge, whereby together with the wedging of the additional inclined face with the edge of the rail base, the anchor may be held securely in position.

In testimony whereof I hereunto affix my signature.

FRED C. ELGENA.