W. H. CASTLE.

RAIL FASTENER.

APPLICATION FILED MAR. 16, 1909.

955,761. Patented Apr. 19, 1910.

Fig. 1.

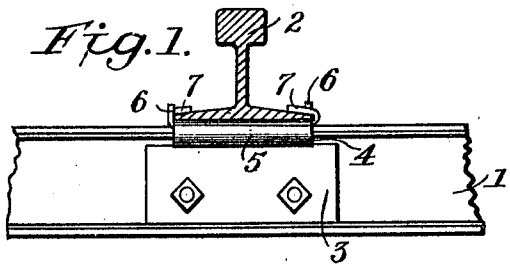


Fig. 2.

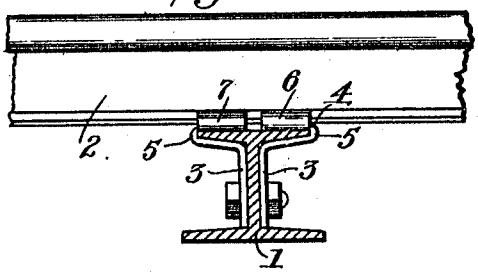


Fig. 3.

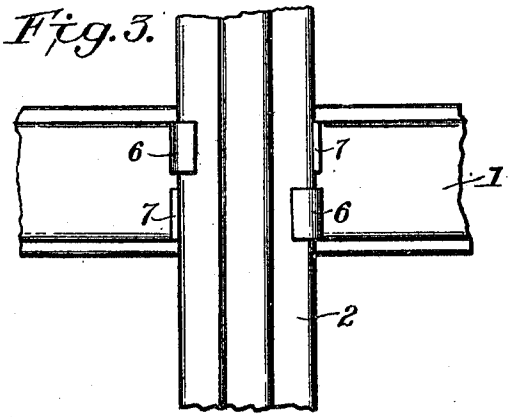


Fig. 4.

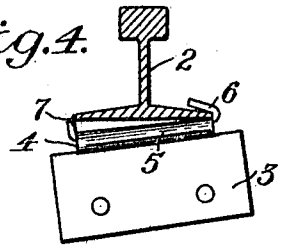


Fig. 5.

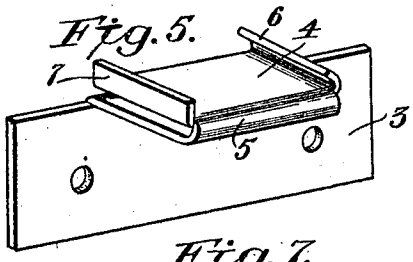


Fig. 6.

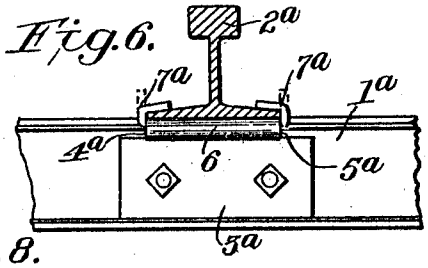


Fig. 8.

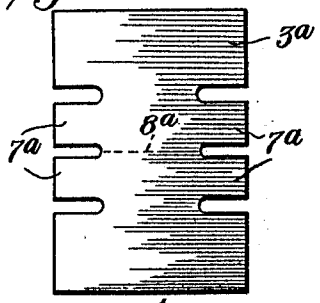
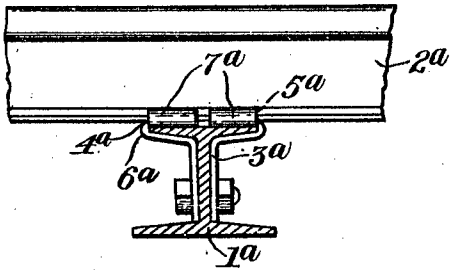


Fig. 7.



Witnesses

C. H. Walker.

Ernest P. Hutchinson.

Inventor

William H. Castle

By Edson Bros,

Attorneys.

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. CASTLE, OF GENEVA, OHIO.

RAIL-FASTENER.

955,761. Specification of Letters Patent. Patented Apr. 19, 1910.

Application filed March 16, 1909. Serial No. 483,794.

To all whom it may concern:

Be it known that I, WILLIAM H. CASTLE, a citizen of the United States, residing at Geneva, in the county of Ashtabula and State of Ohio, have invented certain new and useful Improvements in Rail-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to rail fasteners especially designed for securing rails to I-beam ties.

Experiments with I-beam ties have shown that the webs thereof are apt to buckle under heavy loads unless they are made thick and heavy. The ordinary means of securing rails to the top flanges of an I-beam tie by means of clips bolted to said flanges has been found to be inadequate because the bolts will sometimes be sheared off under the lateral strain of a heavy train rounding a curve. Of course, this weakness in the old form of rail fasteners may be overcome by employing larger bolts, but this requires the use of more metal and is a greater expense, the same as the use of heavier ties with thicker webs.

It is the object of my present invention to provide a rail fastener which will take all lateral strain off of the bolts and also strengthen the web of the tie below the rail so that there will be no possibility of its buckling. When my fastener is used, the tie may be made even lighter instead of heavier to obtain the required strength. My fastener also forms a saddle for the rail to rest in, making a stronger and better footing for the rail.

Each rail clamping device comprises a portion arranged across the I-beam tie and below the rail, said portion being provided with means for gripping the foot of the rail, portions extending down under the top flange of the tie, and portions parallel with the web of the tie and extending the full distance from the top flange to the foot thereof. The rail clamp is preferably made in two similar parts, but it may be made in one piece, if desired.

The invention also consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawing illustrating the preferred embodiment of my invention: Figure 1 is a side view of an I-beam tie showing my preferred form of rail clamp securing a rail thereto. Fig. 2 is an end view of the tie showing the same parts. Fig. 3 is a plan view. Fig. 4 is a detailed view showing how the parts of the rail fastener are brought into engagement with the foot of the rail. Fig. 5 is a perspective view of one of the supplemental parts of the rail fastener. Fig. 6 is a side view of a tie showing a modified form of rail fastener securing a rail thereto. Fig. 7 is an end view of the tie showing the same parts, and Fig. 8 is a detailed view showing how the modified form of rail fastener is cut from a single sheet of metal.

Referring first to Figs. 1 to 5, inclusive, of the drawing, 1 designates the I-beam tie, 2 the rail and 3 the rail fastener which is here shown as made in two similar parts. Each of these parts comprises a horizontal looped portion 4 embracing one side of the top flange of the tie, and a vertical portion 3 contacting with the web of the tie.

The upper strip of the horizontal looped portion is arranged below the rail and is provided with means at its extremities to grip the foot of the rail. My preferred means for gripping the rail consists of a turned down lip 6 at one end of the looped portion and an upright shorter lip 7 at the other end thereof. The two parts of the rail fastener are made similarly with respect to the lips so that, when they are in position at opposite sides of the tie, there will be one turned down lip and one upright lip at each side of the foot of the rail, as illustrated best in Fig. 3. The parts of the rail fastener can be readily engaged with the rail by tilting them slightly and first inserting one edge of the foot of the rail below the turned down lip, as shown in Fig. 4. The vertical portions of the rail fastener also extend below the rail and fill the space between the top flange and the foot of the tie. This serves as a reinforcement for the web of the tie at the points where strengthening is needed, namely where the weight of a train comes on the ties.

Referring to Figs. 6 to 8, inclusive, of the drawing, I have there illustrated how the rail fastener may be made in a single piece instead of in two supplemental parts. In these figures, 1^a designates the tie, 2^a the rail and 3^a the rail fastener. The latter is pref-

erably cut from a single piece of sheet metal, as shown in Fig. 8, and then bent to form the horizontal portion 4^a arranged below the rail, the looped portions 6^a embracing the top flange of the tie and the vertical portions 3^a contacting with the web of the tie. Rail clamping lips 7^a are formed by suitably slitting the plate from which the fastener is formed, as shown in Fig. 8. Said lips are adapted to be bent down over the foot of the rail after the latter is put in place. The vertical portions of the modified construction fill the space between the top flange and foot of the tie, the same as in the preferred form. It is intended that this modified form of rail fastener shall be slipped on the end of the tie and the proper location thereon be determined by bolt holes formed in the web of the tie. If desired, the single piece rail fastener may be separated into two parts by cutting along the dotted line 8^a in Fig. 8. The rail fasteners are made of structural steel so that the lips may be bent down and raised without fracturing or weakening them.

I claim:—

1. A rail fastener, for use on I-beam ties, made in two similar supplemental parts to be arranged on opposite sides of the tie, each part comprising a portion to extend below the rail, a portion to embrace the top flange of the tie, and a portion parallel with the web of the tie, said portion which extends below the rail having a turned-down lip at one end and an upright lip at the other end to engage opposite edges of the foot of the rail respectively.

2. A rail fastener, for use on I-beam ties, made in two similar supplemental parts to be arranged on opposite sides of the tie, each part comprising a portion to extend below the rail, a portion to embrace the top flange of the tie, and a portion parallel with the web of the tie, said portion which extends below the rail having a turned-down lip at one end and an upright lip at the other end to engage opposite edges of the foot of the rail respectively, the lips on the two parts of the fastener being arranged so that one turned-down and one upright lip is located on each side of the rail.

In testimony whereof, I affix my signature, in presence of two witnesses.

WILLIAM H. CASTLE.

Witnesses:
J. A. McFarland,
M. C. Hill.