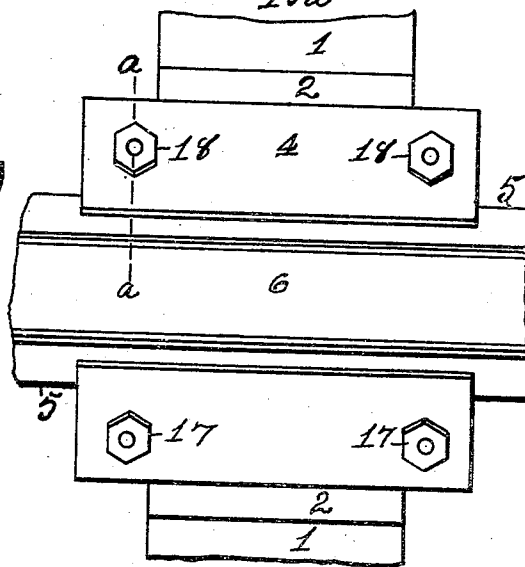
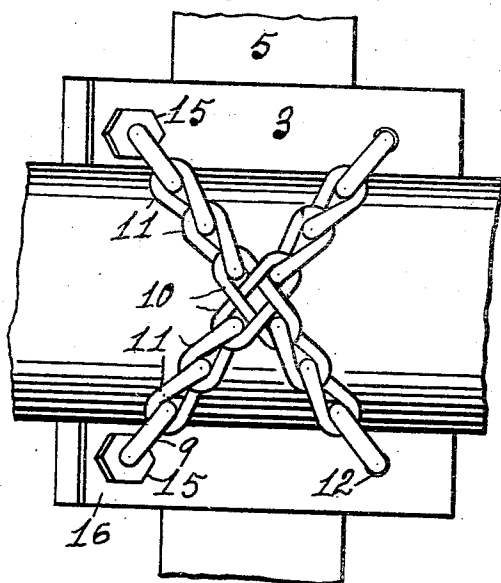
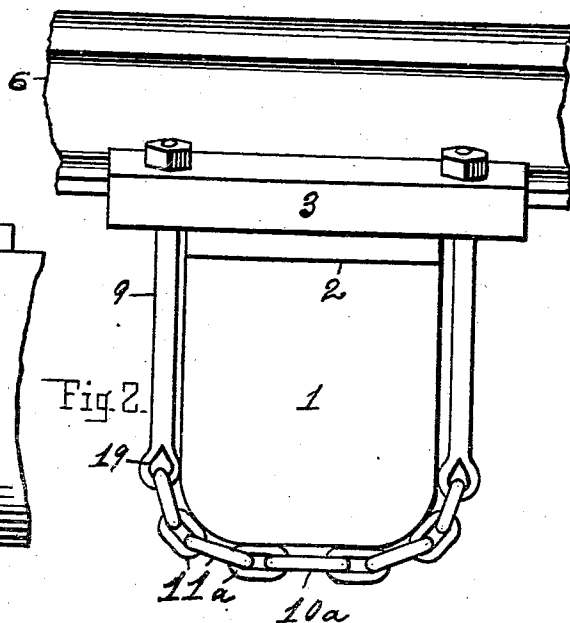
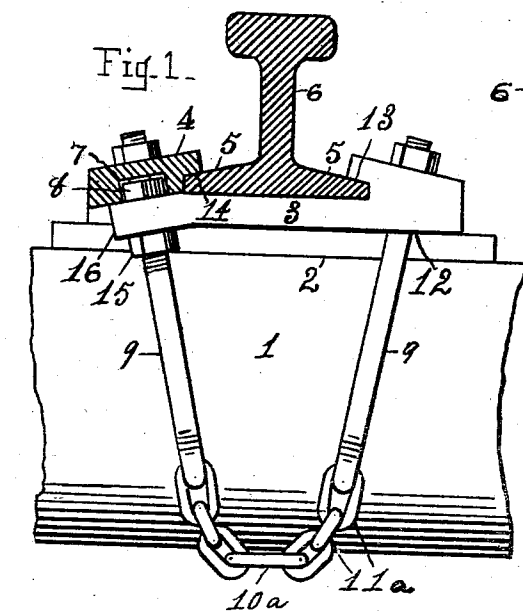


H. J. GERHARDT & F. C. STECKER.
RAIL FASTENING FOR SECURING RAIL CHAIRS TO TIES.
APPLICATION FILED APR. 6, 1908.

935,752.

Patented Oct. 5, 1909.



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HENRY J. GERHARDT AND FRED C. STECKER, OF NEENAH, WISCONSIN.

RAIL-FASTENING FOR SECURING RAIL-CHAIRS TO TIES.

935,752.

Specification of Letters Patent.

Patented Oct. 5, 1909.

Application filed April 6, 1908. Serial No. 425,370.

To all whom it may concern:

Be it known that we, HENRY J. GERHARDT and FRED C. STECKER, citizens of the United States, and residents of Neenah, in the county of Winnebago and State of Wisconsin, have invented a new and useful Rail-Fastening for Securing Rail-Chairs to Ties, of which the following is a specification.

Our invention relates to an improved fastening for securing a rail road rail to a tie, which tie is formed of a material not adapted for having spikes driven into it, such as ties formed of cement, concrete, paper pulp, corn-stalks, &c, which may be adapted for rail road ties, and it consists of a suitable chair for supporting the rail, and a flexible fastening which is placed around the tie, its ends terminating in threaded bolts which extend upward through the rail chair and are provided with nuts for being screwed down upon the chair for securing the chair to a tie, the chair being fitted for having the rail detachably secured within it, the improvement being shown in the accompanying drawing, in which,—

Figure 1 is a side elevation of a section of a tie and showing a rail in cross section mounted in a rail chair, the chair being secured to the tie with one modification of our fastening. Fig. 2 is an end elevation of a tie, the chair and a section of a rail mounted upon the tie, and a fastening of a similar kind as is shown in Fig. 1, encircling the tie and securing the chair to it. Fig. 3 is a plan view of the tie turned bottom side up and having a rail chair secured to it with the preferred form of the flexible part of the fastening. Fig. 4 is a plan view of a section of the top of the rail, its chair, and a section of the tie. Similar numerals and letters indicate like parts in the several views.

1, indicates a section of a tie; 2, a cushioning piece of wood or other suitable material, placed between the chair bed piece 3, and the tie. This cushioning piece should have a greater length along the tie than the width of the chair.

4, is a cap piece for inclosing the edge of the flange 5 of the rail 6, the cap piece being in section in Fig. 1 upon the line *a, a*, of Fig. 4, and showing a socket 7 for receiving the nut 8 of one of the bolts 9 of the fastening. This socket being but slightly larger than the nut, when placed over it will serve as a lock to prevent the nut from turning. The preferred form of fastening is formed of two

long links 10, intertwined with each other, each end of each link having extending from it a plurality of links 11, having a quarter twist as shown, for permitting the chain 60 which the links form to lie as nearly flat as possible against the surface of the tie. These chains are extended around the lower corners of the tie and up its sides a sufficient distance for permitting each bolt 9 to be entered into 65 or withdrawn from their respective bolt holes 12, in the chair, without the necessity of digging into the road bed below the tie channel for providing sufficient space. The bolts and chains being arranged as shown in 70 Fig. 3, with the centers of the long links directly under the center of the chair, and of the transverse center of the rail, the rail chair is held with a binding fastening device which covers a large surface upon the tie and there- 75 by distributes the fastening surface over a large area, while it holds the chair after the nuts upon its fastening bolts are properly screwed down against movement in any direction. 80

The chairs are provided with a groove 13, upon one side of the rail flange for receiving the outer edge of said flange, and upon the other side of the rail the cap piece 4 is provided with a rabbet 14 to be bolted 85 down upon the rail flange. The chair upon one side of the rail, preferably the inside of the track, is first secured to the tie by providing the two bolts upon that side with nut collars, 15, which collars are adjusted in 90 position for bearing against the angular shoulders 16 of the lower side of the chair bed 3. The nut 8 is then to be screwed down upon each of said bolts until the chair is tightly clamped between the nuts 8 and 95 collar 15. The nut collar 15 will serve its intended purpose if it is a fixed collar upon the bolt, and may be so attached to the bolt if desired. The rail is then placed within the chair by inserting a flange within the 100 groove 13. The nuts 18 may now be screwed down upon the cap piece 4, for securing the rail to the chair. Up to this time the chair is not secured to the tie and can be moved longitudinally of it. After being adjusted 105 for bringing the rail into its required position and gage of track, the nuts 17 can be screwed down until the fastening device is sufficiently tightened around the tie. With this fastening around the tie, the strength 110 of the tie is increased rather than diminished, as it would be with bolt holes through

it, and the rail chair can be adjusted in position with great accuracy, before the final clamping down is performed.

In Figs. 1 and 2, a modification in the part of the fastening which passes around the lower corners and under the tie is shown. Instead of the intertwined links 10, a ring 10^a is used, and for the short twisted links 11, straight links 11^a are provided. The bolts 9 are each provided with an eye 19 for the connection therewith of the links 11 or 11^a, of the chain sections. The lower corners of the tie, at least for a space each side of a rail, should be rounded off as shown in Fig. 2.

Having described our invention, what we claim and desire secure by Letters Patent, is,—

1. A fastener for securing a rail road rail to a tie, comprising a chair having means for securing a rail therein, a clamping device for securing the chair to the tie consisting of two links intertwined with each other, four chain sections extending, one from the end of each link radially from their centers, two upon each side of the tie and running up around said sides and each section terminating in a threaded bolt arranged to pass through said chair, and a nut upon each bolt adapted to be screwed down upon said chair and tighten said chains around the tie.

2. A fastener for securing a rail road rail to a tie, comprising a chair for supporting a rail, a groove in the chair for receiving an

edge of the bottom flange of one side of the rail, two bolt holes through the chair outside of said groove, a detachable cap piece for the flange upon the other side of the rail, a rabbet in the cap piece for engaging the edge of the last named flange, two bolt holes through the chair spaced apart the width of the tie, outside of the rail flange, two bolt holes through the cap piece spaced apart a like width of the tie, a socket around each bolt hole in the cap piece adapted to act as a lock for a nut, a clamping device arranged around the bottom and two sides of the tie and terminating with four threaded bolts adapted to extend upward through the chair bolt holes, a collar upon each of the two bolt holes that pass through the cap piece arranged to engage with an angular shaped shoulder upon the lower side of the chair and around the bolt holes of the last named bolts, a nut upon each of the two bolts arranged to be screwed down upon and clamp the chair bed piece between them and said collars, a nut upon each of said two bolts for clamping the cap piece down upon the chair bed piece, and nuts upon the other two bolts for drawing said clamping device tightly around the tie and clamping the chair and tie together.

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