

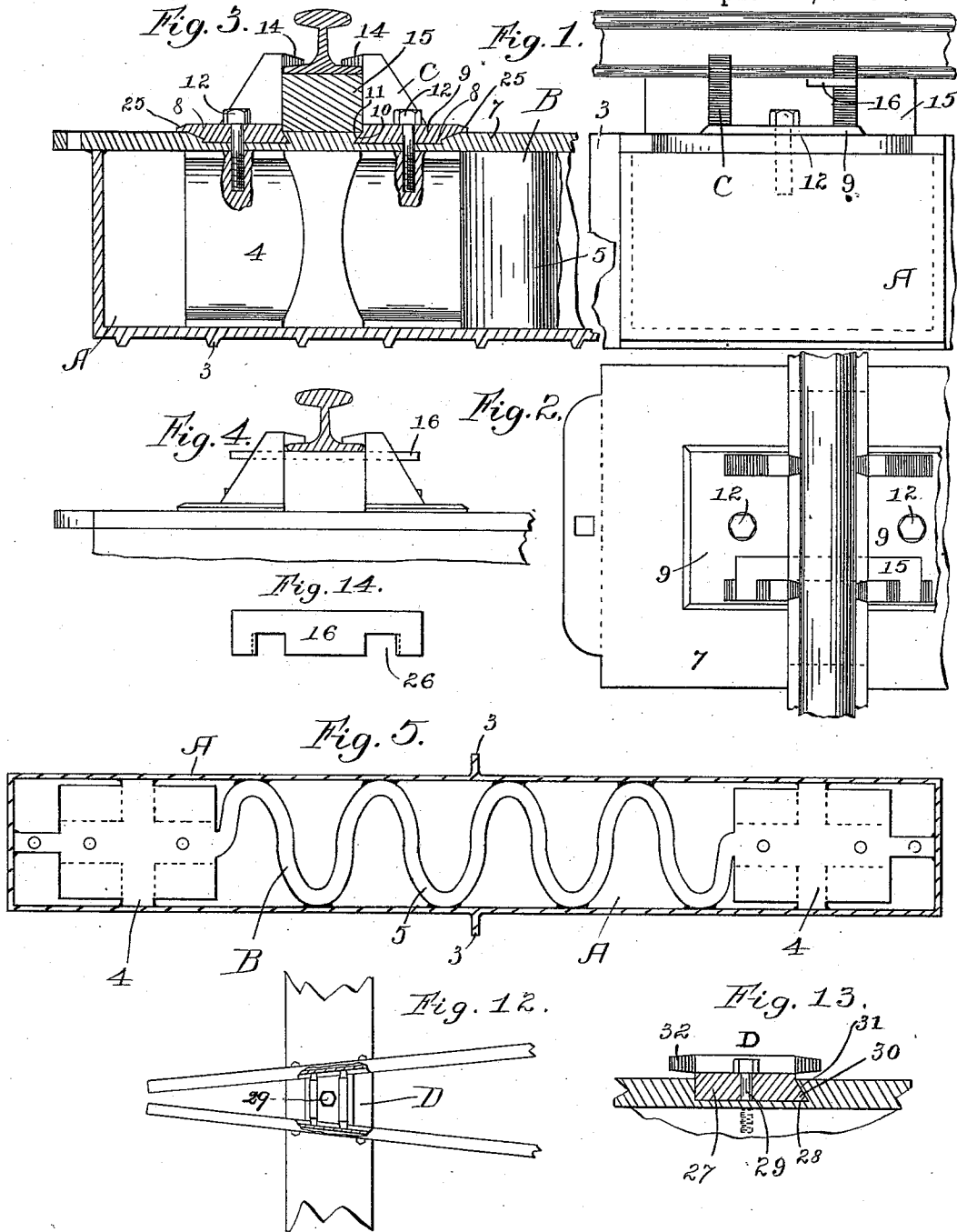
(No Model.)

3 Sheets—Sheet 1.

H. ERICKSON.
METALLIC RAILWAY TIE.

No. 580,937.

Patented Apr. 20, 1897.



Witnesses:

V. G. Broadberry.
W. S. Johnson.

Inventor:

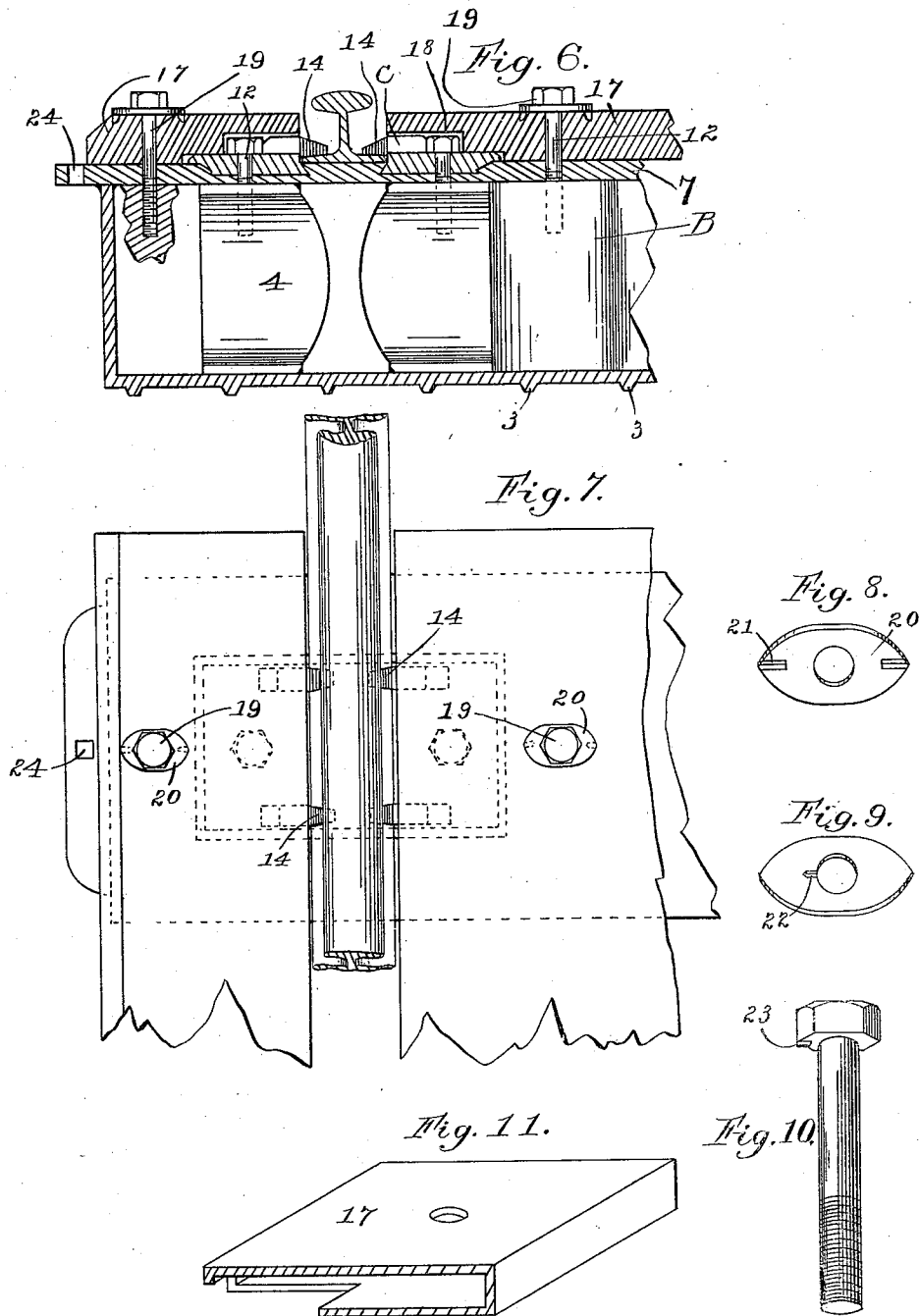
Hans Erickson.

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Witnesses:

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3 Sheets—Sheet 3.

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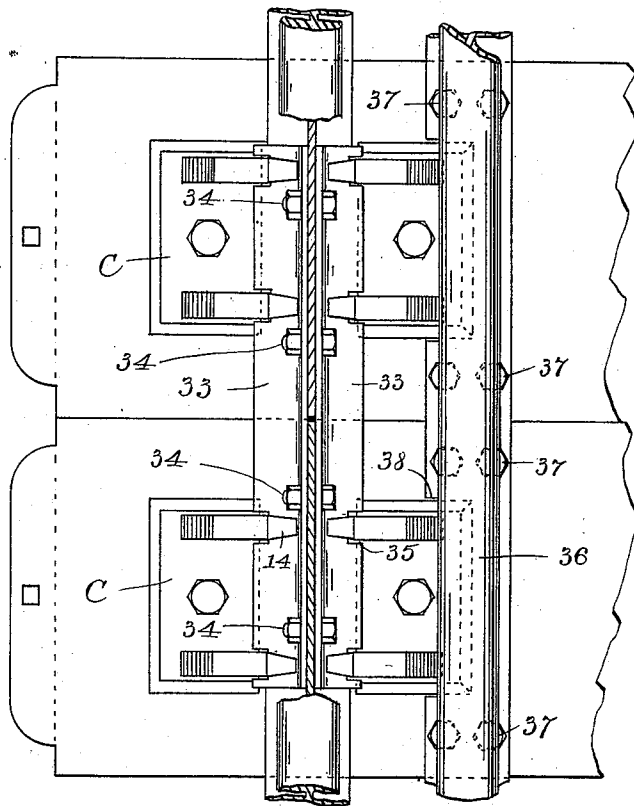


Fig. 15.

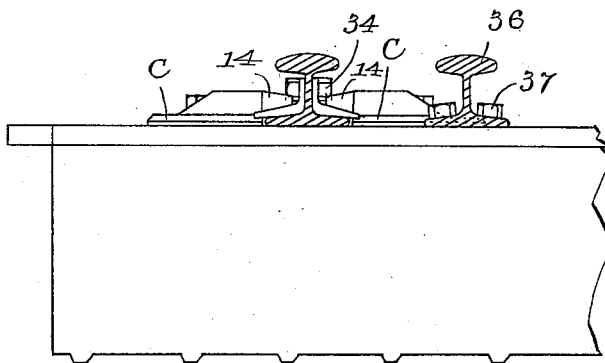


Fig. 16.

Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

HANS ERICKSON, OF AMIRET, MINNESOTA.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 580,937, dated April 20, 1897.

Application filed September 28, 1896. Serial No. 607,208. (No model.)

To all whom it may concern:

Be it known that I, HANS ERICKSON, of Amiret, Lyon county, Minnesota, have invented certain Improvements in Metallic Railway-Ties, of which the following is a specification.

My invention relates to improvements in metallic railway-ties and in means for securing the rails thereto, its object being to provide an improved construction of the same which will not warp or become easily injured in use and which will afford a more secure and permanent support for the rail than the ordinary constructions.

To this end my invention consists in constructing the tie in the form of a metallic box or casing provided with an inclosed metallic stringer, thus making it a construction practically impossible to warp. The rail-holders are arranged in sockets or grooves in the tie and are secured there by bolts which pass through the top of the tie and are threaded in the contained stringer. I also provide improved means for securing the switch-lead to the ties, and means also for securing the cross-planks to the ties. These cross-planks may be either the ordinary wooden planks or my improved metallic planks. Where the ordinary wooden plank is used, I provide a nut-lock for the securing-bolt, preventing turning of the bolt and also cracking of the plank.

In order to prevent displacement of the ties, I preferably form them with transverse ribs upon the bottom and vertical ribs upon the sides to engage the road-bed.

The principal advantages I claim for my invention are in the way of cheapness, for though the ties cost somewhat more originally they last much longer and need less repairs than the ordinary forms, so that they are cheaper in the end. It is also easier to lay a track with my ties, since after the ties are in place the rail-holders can be very easily and rapidly secured thereto and the rails arranged in place. There is also not the danger of warping and other injury to which the ordinary ties are subject, as all parts of my improved tie are metallic and welded or otherwise firmly secured together.

Other advantages will appear from the specification and the accompanying drawings, in which—

Figure 1 is a view looking toward the end of the tie, illustrating the same supporting a rail and a raising-shim being shown in connection therewith which I use where necessary to even the rails. Fig. 2 is a top elevation of Fig. 1. Fig. 3 is a partial longitudinal section of one of the ties, showing the manner of securing the rail-holders thereto. Fig. 4 is a partial view looking toward the side of the tie. Fig. 5 is a plan view of the tie with the top removed. Fig. 6 is a partial longitudinal section of one of the ties, showing the ordinary construction in which the rail rests directly upon the tie, thus dispensing with the shim and also showing the method of securing wooden cross-planks in place. Fig. 7 is a top view of the construction shown in Fig. 6. Figs. 8 and 9 are details of a form of nut-lock used in connection with my invention. Fig. 10 is a detail of the bolt used with said lock. Fig. 11 is a view of a portion of an improved form of metallic cross-plank. Fig. 12 is a view illustrating my improved means for securing the switch-lead rails to the tie. Fig. 13 is a cross-section of the same. Fig. 14 is a detail of a key adapted to be used when the rails are supported by a shim to prevent movement of the same, and Figs. 15 and 16 are views showing my invention supporting the meeting ends of the rail connected by fish-plates and also showing the manner of securing the guard-rail to the ties.

In the drawings the tie is made in the form of a metallic box or casing A and the contained metallic stringer B preferably welded thereto, the casing A being formed upon its bottom and sides with ribs 3 to prevent slipping and displacement of the ties. The contained stringer B is made up of the heads 4, connected by a corrugated web 5, as shown in Fig. 5.

The rail-holders C are secured in place in the top plank 7 of the tie, as shown best in Figs. 3 and 6, this top plank being welded or otherwise permanently secured to the casing A. The top of the plank is provided with sockets 8, in which fit the bases 9 of the rail-holders, the base of the holder being formed with the forwardly-projecting lip 10, fitting into a notch 11 in the end of the socket, thus preventing vertical movement, and is formed

with the rearwardly-projecting flange 25, bearing upon the top of the tie, so as to keep water from getting into the socket. The rail-holders are secured in place by the bolts 12, passing through the top of the tie and threaded into the heads 4 of the stringer. The rail-holders are formed at their tops with inwardly-projecting lips 14, which bear upon the base of the rail to hold it in place.

In Figs. 1 to 4 I show the rail supported by a shim 15, which shim is adapted to be held in place by a suitable key 16. This form is only used where it is necessary to lift the rail in leveling the track. This key is cut away at 26 to embrace the sides of the rail-holders, and thus also serve as a strengthening-support for the holders.

In Figs. 6 and 7 I show the ordinary and preferred form of rail-holder, the rail in this case resting upon the tie, so that no shim is used. In these figures also I illustrate my means for securing the wooden cross-planks to the ties. The cross-plank 17 is cut away at 18 to fit over the rail-holder and is secured in place by bolts 19, passing through the top of the tie and being threaded into the head 4 of the stringer.

In order to prevent cracking of the cross-planks and turning of the securing-bolts, I preferably use the form of nut-lock and bolt illustrated in Figs. 8 to 10. This consists of a washer 20, formed upon one side with spurs 21, adapted to engage the plank, and formed upon the other side with the notch 22, in which fits a spur 23, upon the under side of the bolt-head, when the parts are in place, as shown in Fig. 6, and thus turning of the bolt, as well as cracking of the plank, is prevented.

In some cases I may prefer to use the form of cross-plank shown in Fig. 11, in which the plank is made of metal and hollow and is cut away to fit over the rail-holders the same as with the wooden plank.

In Figs. 12 and 13 I illustrate means used in connection with my tie for securing diverging rails, as in the switch-lead, thereto. This consists of a holder D, the base 27 of which is secured in a socket 28 in the tie by means of the vertical securing-bolt 29, the base being formed with a forwardly-projecting lip 30, fitting into a notch 31 in the end of the socket. The holder is provided with the laterally-projecting lips 32, fitting over the base of the rails, as shown in Fig. 12.

With my improved ties the track is constructed as follows: The projecting ends of the top of the tie are formed with openings 24, in which the workmen may insert their picks to lift and set the tie in place, the rails then being placed upon the ties. The rail-holders are secured in place in their receiving-sockets, as illustrated in the drawings, and the cross-planks then secured over them, as illustrated, at the street-crossings, where

such planks are ordinarily used. The form in Figs. 6 and 7 is ordinarily used, and the rails are only shimmed up, as shown in Figs. 1 and 2, where it is necessary to lift portions of the track.

In Figs. 15 and 16 I show my rail-holders used in connection with fish-plates at the ends of meeting rails. The ends of the rails are connected by the ordinary fish-plates 33, bearing upon the web and base of the rails and held in place by securing-bolts 34. The lips 14 of the rail-holders C bear upon the bottom of the fish-plate, the edge of the plate being cut away at 35 to accommodate the holder and allow it to stand in contact with the side of the rail-base.

36 represents the ordinary guard-rail, secured to the ties by bolts 37, the rail-base being cut away at 38 to fit over the bottom of the rail-holder C.

I claim—

1. As an improved article of manufacture, a metallic railway-tie, consisting of an inclosing box or casing, a stringer secured therein, the top plank or cover for the same, and the means for securing the rails and said plank to said stringer.

2. As an improved article of manufacture, a metallic railway-tie, consisting of an inclosing box or casing, a contained stringer, a plank or covering for the same secured to said stringer, and the rail-holders secured in sockets in said plank.

3. As an improved article of manufacture, a metallic railway-tie, consisting of the inclosing box or casing, the contained stringer, the plank or covering secured thereto, the rail-holders secured in said plank, and the ribs upon the bottom and sides of said tie to prevent slipping of the same.

4. In combination with a metallic railway-tie of the class described, consisting of an inclosing box, a contained stringer, a plank or covering for the same, and the rail-holders secured to said plank, of the wooden cross-planks arranged parallel with said rail-holders, the bolts securing said planks to the tie, and the nut-locks provided with spurs engaging said plank and interlocking with the securing-bolts to prevent turning of the same.

5. In a metallic railway-tie of the class described, the combination with the inclosing box or casing, of the contained stringer made up of end heads, and a connected corrugated web, the plank or covering for said casing, and the rail-holders secured upon said plank, with their securing-bolts projecting into the heads of said stringer.

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

HANS ERICKSON.

Witnesses:

F. W. WEBB,
ROBERT PURVES.