

No. 749,817.

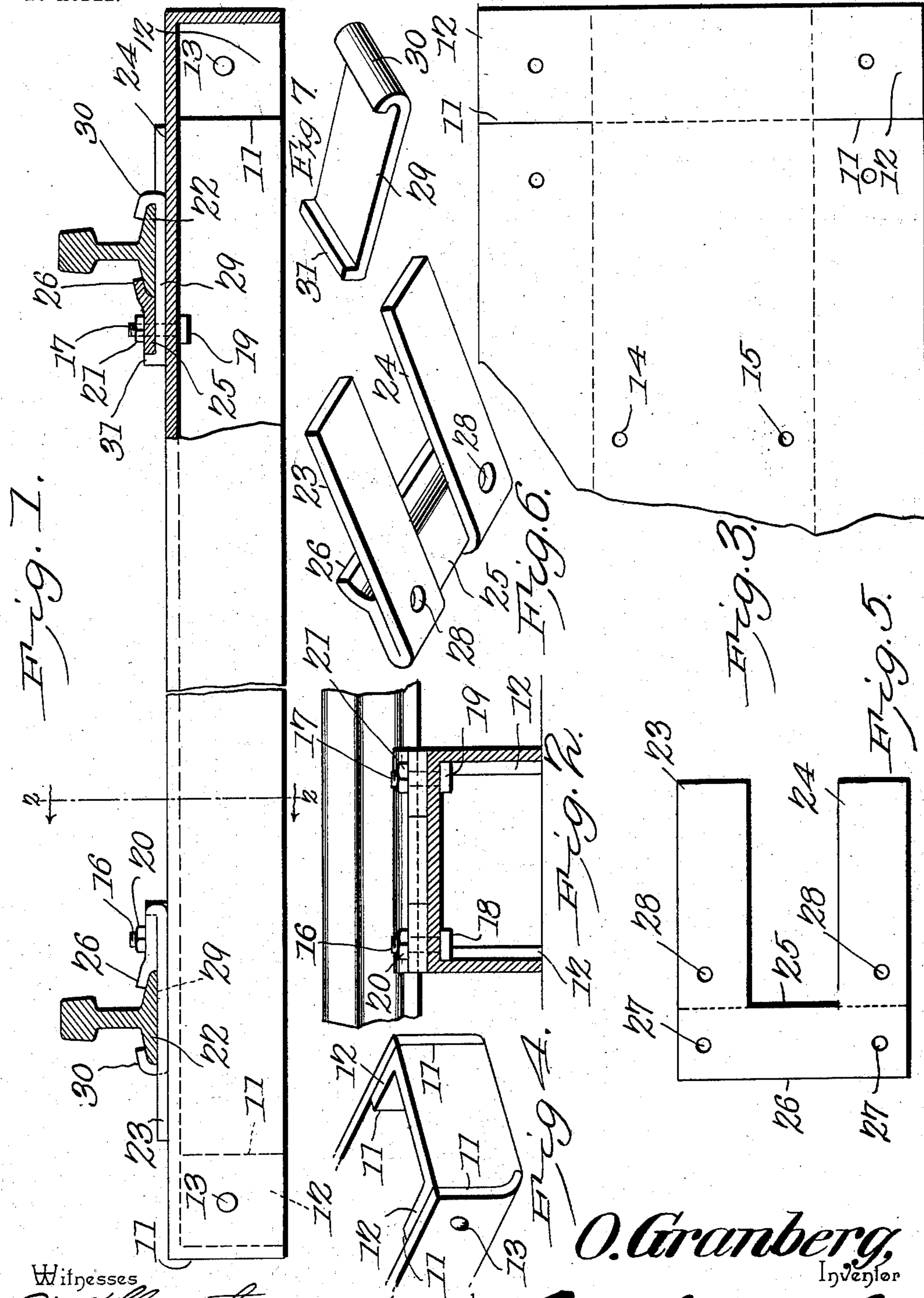
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O. GRANBERG.

METALLIC RAILWAY TIE AND RAIL FASTENER.

APPLICATION FILED NOV. 4, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

OLE GRANBERG, OF BLAIR, WISCONSIN.

METALLIC RAILWAY-TIE AND RAIL-FASTENER.

SPECIFICATION forming part of Letters Patent No. 749,817, dated January 19, 1904.

Application filed November 4, 1903. Serial No. 179,843. (No model.)

To all whom it may concern:

Be it known that I, OLE GRANBERG, a citizen of the United States, residing at Blair, in the county of Trempealeau and State of Wisconsin, have invented a new and useful Metallic Railway-Tie and Rail-Fastener, of which the following is a specification.

This invention relates to railway-ties and rail-fastenings, and has for its object to simplify and improve devices of this class and to produce a tie and fastening means which will more firmly support and secure the rails and all danger of "spreading" or other forms of displacement be avoided.

The invention consists in certain novel features of construction, as hereinafter shown and described, and specified in the claims.

In the drawings illustrative of the invention, in which corresponding parts are denoted by like designating characters, Figure 1 is a side elevation, partly in section, of one of the improved ties with the rail-fastenings and rails, illustrating the construction of the parts. Fig. 2 is a transverse section on the line 2 2 of Fig. 1. Fig. 3 is a perspective view, inverted, of a portion of one of the blanks from which the tie is formed; and Fig. 4 is a similar view with the tie bent into operative shape. Fig. 5 is a perspective view of the blank from which the tie-plate is formed; and Fig. 6 is a perspective view, inverted, of the same bent into operative shape. Fig. 7 is a perspective view of the clamp-plate detached.

The improved device comprises a hollow metallic tie and a rail-fastener associated with the tie whereby the rails are firmly supported and connected with the tie and prevented from spreading or becoming otherwise displaced. The tie portion is formed from a single plate, preferably of steel of sufficient thickness and size to withstand the strains to which it will be subjected when in use, and may vary in size and strength, according to the condition of the road-bed or "tamping" upon which the ties are laid. Thus for comparatively soft road-beds, such as are encountered in prairie countries or in river-bottoms or partially-swampy land, the ties will necessarily be of greater area than in mountainous or rocky

country, where the road-beds are wholly or partially of stone and gravel, and the improved tie which is herein described is easily capable of adaptation to all the varying conditions of road-beds which will be encountered. A portion of one of the blanks from which the ties are formed is represented in Fig. 3 and is provided with clefts 11 in the opposite sides near the ends, whereby tongues 12 are produced in the corners of the plate, as shown. The margins of the plate are then bent along the dotted lines and the tongues 12 folded in between the bent side margins and riveted fast thereto, as at 13, thus forming an elongated box-like structure open at the bottom and with vertical side and end walls at right-angles to the upper face, as shown. The tamping will be inserted within the tie before it is placed in position to receive the rails, and will therefore be in condition to effectually resist all strains to which it may be subjected, either vertically, longitudinally, or laterally, as the greater the strains the more firmly will the ties become embedded in the road-bed. The strains upon the rivets 13 are almost entirely transversely or "shearing." Hence they are capable of withstanding a much greater strain than if the strains were exerted longitudinally of the rivets or in the tensile direction with a tendency to "strip" the riveted ends. A tie thus constructed can be made materially stronger with the same thickness of plate, or a stronger tie can be constructed with a thinner plate. Arranging the clefts 11 in the sides of the plate and folding the corners 12 inwardly and riveting them to the side walls of the tie is therefore of material advantage, as the strength of the tie is thereby materially increased without increase of expense or weight.

The tie is provided with spaced apertures 14 15 for the clamp-bolts 16 17 of the rail-holding portion of the device and will be located relatively close to the sides, so that the heads 18 19 of the bolts coming into contact with the inner sides of the ties will be prevented thereby from rotating. The nuts 20 21 on their upper threaded ends are "set up," as hereinafter shown.

Resting upon the ties beneath the rails are

tie-plates each formed of a single metallic plate provided with spaced side bars 23 24, connected by a lateral bar 25, the latter folded over upon the side bars and with the free edges 26 formed to closely engage and project over the tie-flanges of the rails, the rails resting upon the bars 23 24, as shown. The side bars 23 24 are designed to extend along the opposite edges of the tie, and the portion 25 and portions 23 24 will be apertured, as at 27 28, for the passage of the bolts 16 17, as shown.

Fitting between the side bars 23 24 and extending beneath the rails are clamp-plates 29, one end having a lip 31 for engagement with the outer edge of the portion 25 and the other end with a lip 30 for engagement with the opposite side of the tie-flange of the rail, as shown. By this simple arrangement it will be noted that when the parts are assembled and the clamp-nuts 20 21 set "home" the rails will be very firmly clamped to the tie and all tendency to lateral motion effectually resisted, and in a road-bed equipped with this improved tie and fastening means no danger will exist of the spreading of the rails, no matter how severe the lateral strains may be or how heavy or high the rails may be constructed.

The plates and clamps may be of any size or weight of metal and will preferably be pressed from steel plates, as before noted. The bolts and other parts may be of any desired size to enable them to effectually resist the strains to which they will be subjected. Having thus described my invention, what I claim is—

1. A railway-tie consisting of a metallic plate having transversely-disposed clefts in its opposite sides and spaced from the ends to form

tongues at the corners of the plate, and with its margins bent at right angles to the plane of the tie and said tongues interlapping the side margins and riveted thereto.

2. A hollow metallic tie having apertures near its sides, bolts engaging said apertures and having heads within the ties extending to the side walls thereof, the rails, and rail-plates engaging the rails and supported in position by said bolts, the rails being thereby clamped to the ties and the bolts prevented from rotating under the jars or concussions of passing trains.

3. A hollow metallic tie, a rail-plate supported longitudinally of said tie and formed with a flange engaging one side of the base-flange of the rail and with spaced side bars extending beneath the rail, and a clamp-plate fitting between said side bars and having hooked ends for engagement with said rail-plate and the opposite side of said rail-flange, and clamp-bolts uniting said tie-plate and tie.

4. A rail-fastening comprising a member formed of a single metallic plate having spaced bars extending laterally therefrom and with the body of the member folded over upon the bars and bent to fit one side of the rail-flange, and a clamp-plate fitting between said bars and having flanges bent to form hooks upon its ends for engagement respectively with the folded portion of said plate and the opposite side of said rail-flange.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OLE GRANBERG.

Witnesses:

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