

G. B. HOAK.

RAIL TIE.

APPLICATION FILED JUNE 26, 1911. RENEWED JAN 25, 1913.

Patented Mar. 25, 1913.

1,056,902.

2 SHEETS—SHEET 1.

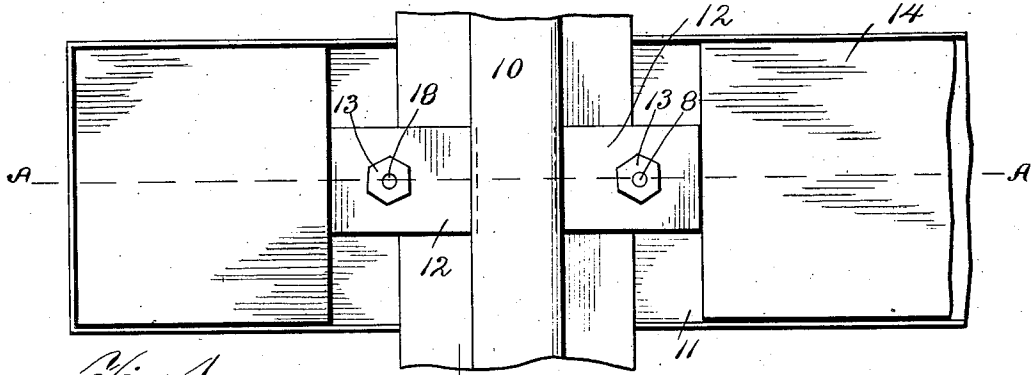


Fig. 1.

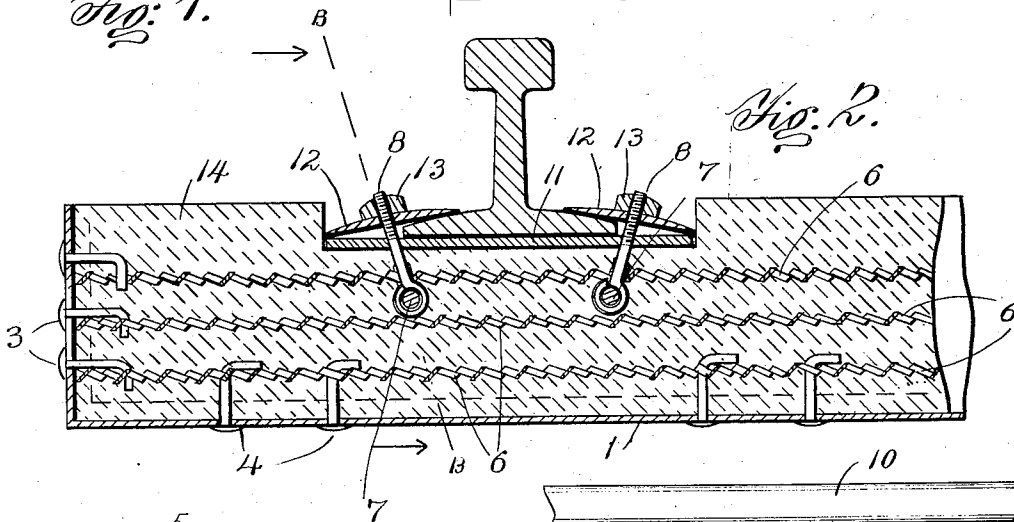


Fig. 2.

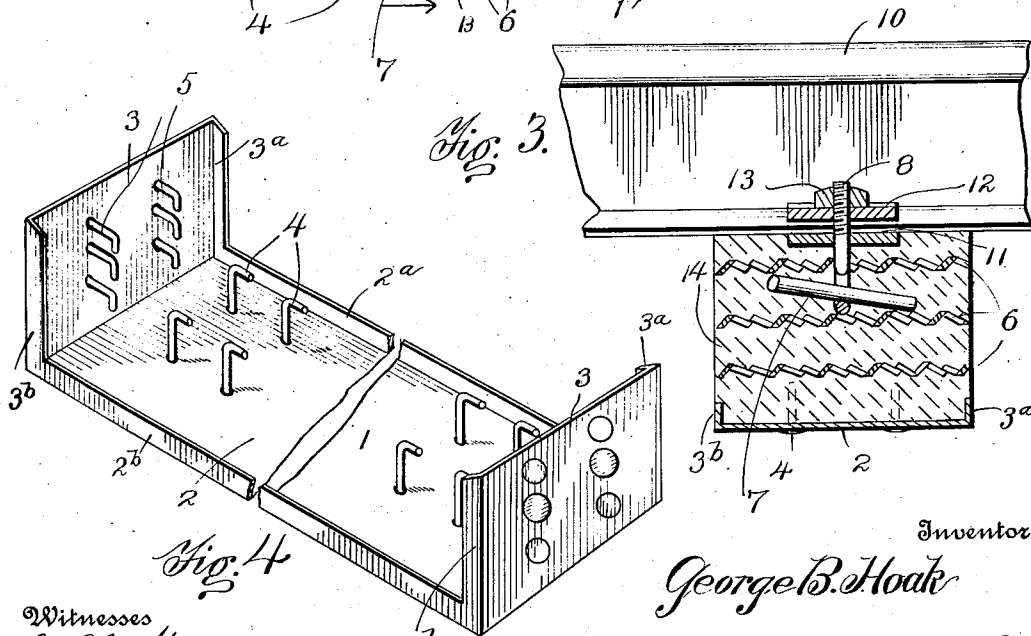


Fig. 3.

Fig. 4.

Witnesses

M. P. McKee

Geo. D. Dyer

Inventor

George B. Hoak

By

Alex. J. Meddaburn Jr.

Attorney

G. B. HOAK.

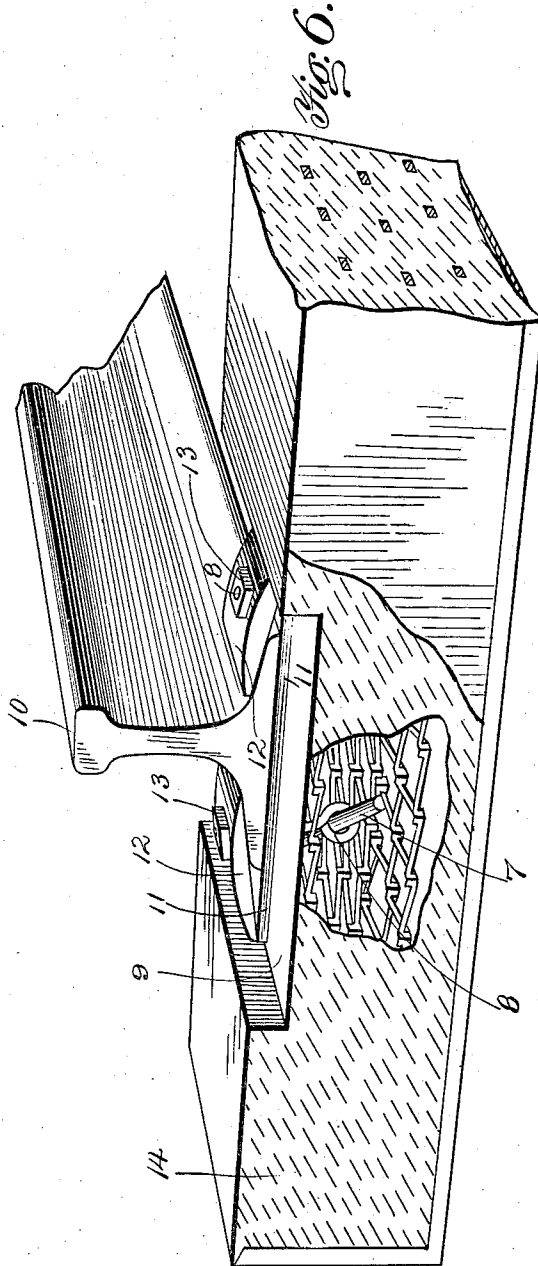
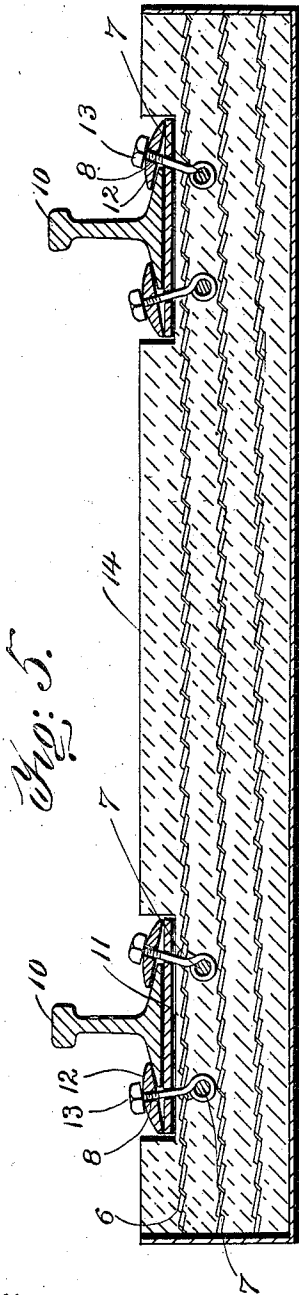
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M. P. McKee

Geo. W. Edwards

Inventor

George B. Hoak

By

Alex. J. Medderson Jr.

Attorney

UNITED STATES PATENT OFFICE.

GEORGE B. HOAK, OF PITTSBURGH, PENNSYLVANIA.

RAIL-TIE.

1,056,902.

Specification of Letters Patent.

Patented Mar. 25, 1913.

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To all whom it may concern:

Be it known that I, GEORGE B. HOAK, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Ties, of which the following is a specification.

This invention relates to improvements in rail ties of that species whereby the opposite flanges of a rail are clamped down in any position and are held against lateral movement.

More specifically my invention relates to a concrete block upon which a rail is received and means carried by the concrete block engaging the rail at opposite sides for clamping it down for rigid contact with the surface of the concrete block.

My device attains great simplicity in the feature of forming the joint between the rail and the substructure therefor and the clamping means may be readily set into position and disengaged with relative ease.

With these and other objects in view my invention embraces the construction, arrangement and combination of the various parts hereinafter described, shown in the drawings and then more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a top plan view showing the rail clamped down rigidly upon the concrete block, Fig. 2 is a side elevation in section of a concrete block upon which the rail is removably fixed by means of my clamp. Fig. 3 is an end sectional view of a concrete block taken on the line B—B of Fig. 2, with the rail fastened thereto, Fig. 4 shows in perspective a mold or metallic container for the concrete disclosing the projections for the reinforcing strips of expanded metal, Fig. 5 is a longitudinal elevation in section of the mold containing concrete and showing the two opposite rails mounted thereupon, Fig. 6 is a side elevation partly broken away and partly in section showing the reinforcing strips of expanded metal and the interiorly projecting bolts to which the clamps are fastened.

1 designates a suitable metallic mold for concrete which is adapted to form the substructure for the rails and 2 is the bottom thereof, and 3 the opposite upstanding ends; the bottom is formed with up-standing flanges 2^a and 2^b and each end 3 is formed with in-

wardly projecting flanges 3^a and 3^b. Upon each of the ends and also upon the bottom are mounted, preferably in alinement a series of spaced apart projections having hook formations and so disposed as to facilitate the mounting of the reinforcing strips of expanded metal thereto, hereinafter more fully described. These hooks are designated at 4 and 5 respectively and the hollowed portions of the expanded metal are held by said hooks against disengagement thereby affording very effective resistance with the concrete filling in the said mold.

6 designates a series of horizontally disposed strips of expanded metal for reinforcing the concrete filling in the mold 1,—as shown clearly in Figs. 2, 5 and 6. Each of the hook members or projections 4 and 5 respectively upon the bottom and at each end of the mold 1 is disposed within the loop of the appropriate strip so as to be in alinement therewith.

8 designates the means I employ for clamping down the opposite sides of the rail upon the concrete substructure, and as shown, consists preferably of a bolt formed with an eyelet at one end and being screw-threaded at the opposite end. A suitable sized notch or recess 9 is formed upon the exterior surface of the concrete block for the bottom of each rail 10 and as shown is rectangular in cross section. The bolt 8 is intended to be set in the concrete at an angle with respect to the vertical and will project above the recess 9 to engage the clamp 12.

In order that the bottom of the rail, usually formed with oppositely extending upstanding flanges, shall not form upon the top of the concrete notches or irregularities of surface caused by the vibrations of the rail while the train is driven over it, I interpose between rail and the top surface of the recess 9 a metallic wear plate 11 which extends to close contiguity to the sides of the recess 9. Said wear plate is formed with inclined apertures through which the bolts 8 project above the adjacent flanges of the rail 10, there being utilized two bolts 8 similarly formed which are placed in juxtaposition adjacent the flanges of the rail and in a slanting direction with respect thereto. The clamping member from which the bolt 8 is shown centrally projecting is designated at 12 and is formed of any suitable

metal of sufficient tenacity; each clamping member 12 is preferably dome shaped its bottom being flat.

13 indicates a nut engaging the projecting screwthreaded end of the bolt 8 to effect the clamping down the rail upon the concrete block. The downwardly and laterally inclined metallic member 7 passes through the eyelet extremity of each bolt 8 to hold it in set position and both the bolts 8 and the interlocking king members 7 are held in proper relation by the concrete filling in the mold or container 1.

In practice after the reinforcing strips of metal are caused to engage the various hook members 4 and 5, the concrete 14 is ready to be filled into the mold 1 until it reaches approximately the level of the middle strip of expanded metal (three strips of expanded metal being preferably used as shown in Figs. 2, 5 and 6); the bolts 8 and rigid bars or members 7 are then placed in interlocking position, the end of the bolt being passed through the wear plate 11 and clamping member 12 and the nut 13 so as to be held at a slant and to project below the bottom of the rail to the proper level, said level being a point between the middle and the upper strips of expanded metal 6. The concrete 14 may be then filled in upon the said interlocking members 7 and 8 and the work of filling the concrete substructure continued until the mold 1 is completely filled, the concrete snugly engaging the reinforcing strips of expanded metal and overlying the flanges 3^a and 3^b of the sides 3 and the flanges 2^a and 2^b of the bottom 2, the top face of the concrete filling being flush and formed as above stated, with recesses 9 for the oppositely arranged rails 10. When the concrete is sufficiently set the rails are ready to be clamped down upon the wear plate 11 and this is done by first mounting the wear plate 11 upon the bottom of the recess 9, so that the screw threaded ends of each bolt 8 shall project thereabove and the clamping members 12 are then fitted upon the bolt 8 so that one end thereof abuts the adjacent end of the wear plate 11 and its opposite end bears upon the adjacent flange of the rail 10. It will be noticed that as thus placed each member 12 will slant upwardly and from the wear plate 11 to the flange of the rail 10; the nut 13 is then screwed home upon the bolts 8 thereby causing the bottom of the rail to have rigid contact with the wear plate 11 and forming an effective tie or joint for the rail. Owing to the inclined position of the various parts of my clamping means each component element is able to offer the most effective resistance against any movement of the rail without appreciably exerting any strain upon the concrete filling in the mold 1.

I claim and desire to secure by Letters Patent:—

1. A device of the character described comprising a channel-iron member arranged to receive a filling, flanges formed at right-angles on the edges of the three sides of said member and arranged to confine said filling in the latter, and a plurality of spaced apart hook-shaped members mounted on the three sides of said channel-iron member.

2. A mold-box comprising a channel-iron member, a series of spaced apart hooks extending from the inner surface of each side of said member, a series of longitudinally-extending hooks on the third side of said member alining with each separate first-named series, longitudinally-extending expanded metal strips engaging each separate series of hooks on the sides of said member and the intervening alining hooks, and a plastic filling contained in said member and surrounding said strips.

3. A device of the kind described comprising a channel-iron member, a series of spaced apart hooks extending at right angles from the inner surface of each side of said member, a series of spaced apart longitudinally-extending hooks on the third side of said member, each of said last-named series alining with one of said first-named series, longitudinally-extending expanded metal strips engaging each separate series of hooks on the sides of said member and also the intervening hooks, said strips being supported by said hooks, a plurality of stay members interposed between said strips and transversely thereto, tie-bolts carried by said stay members and projecting above said channel-iron member, and a plastic filling in said latter member surrounding said hooks, strips, stay members and the submerged bolts.

4. In combination a mold box, a concrete filling in said mold box, a plurality of stay rods embedded in said concrete filling, and tie bolts projecting outside of said mold box and having loops engaging said stay-rods.

5. In combination a channel-iron member, a plurality of longitudinally-extending expanded metal strips disposed between two sides thereof, means for holding said strips in superposed relation, a plurality of rods disposed transversely between two of said strips, tie bolts projecting outside of said member and being mounted on said rods, and a concrete filling surrounding said rods and strips and being surrounded by said member.

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

GEORGE B. HOAK.

Witnesses:

G. J. BLEICHNER,
GEORGE J. KAMBACH.