Dec. 18, 1951 G. G. EDEE 2,579,373

RAIL CHAIR

Filed May 24, 1948 2 SHEETS—SHEET 1

Fig. 1

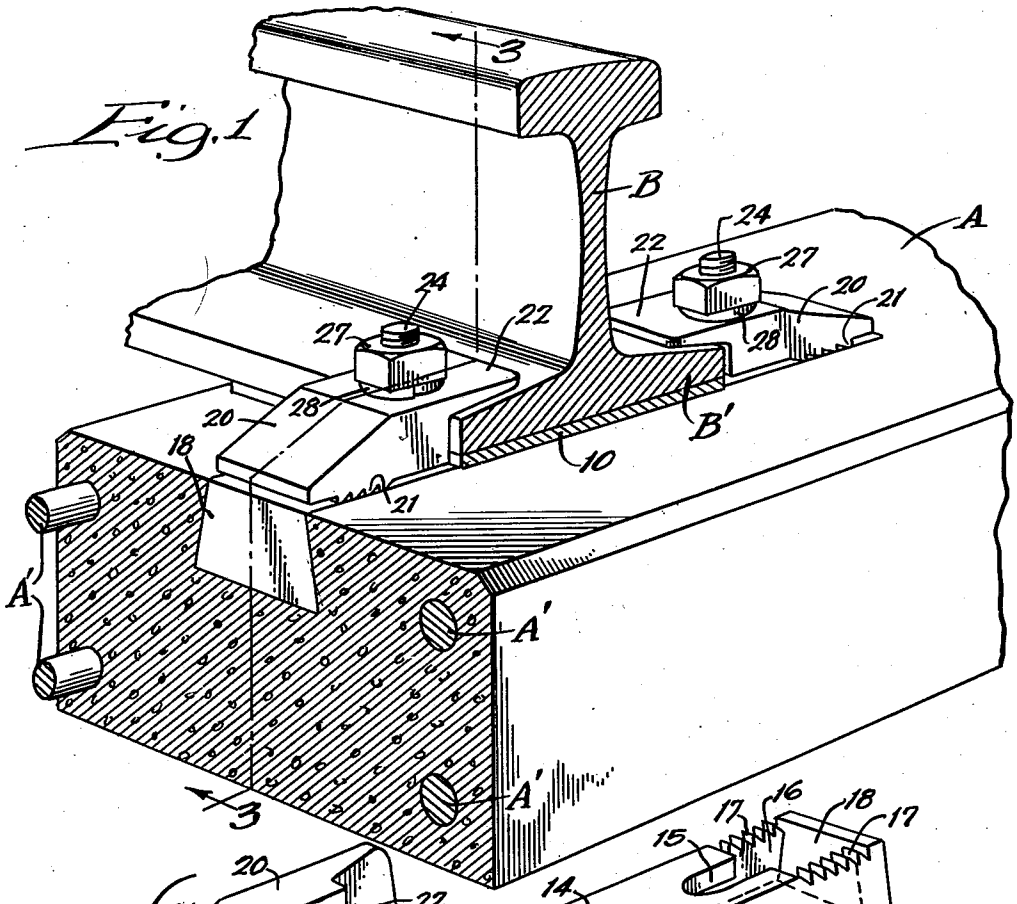
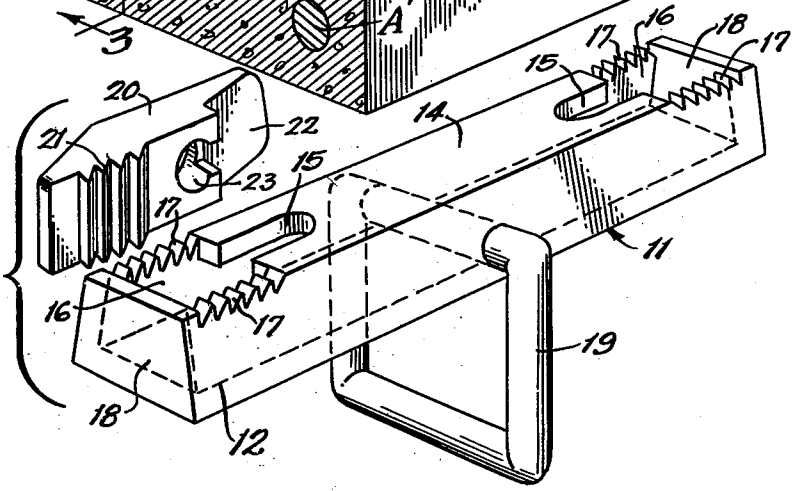


Fig. 2



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Fig. 3

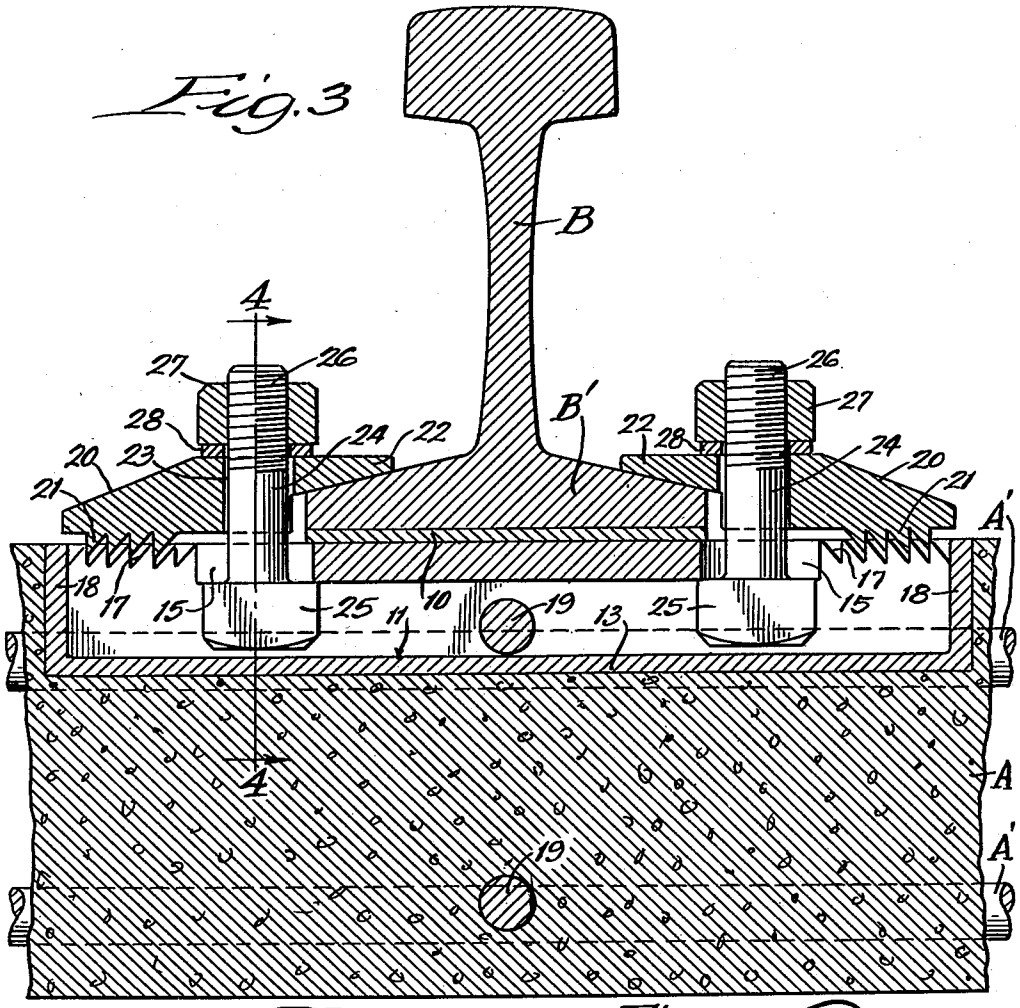


Fig. 4

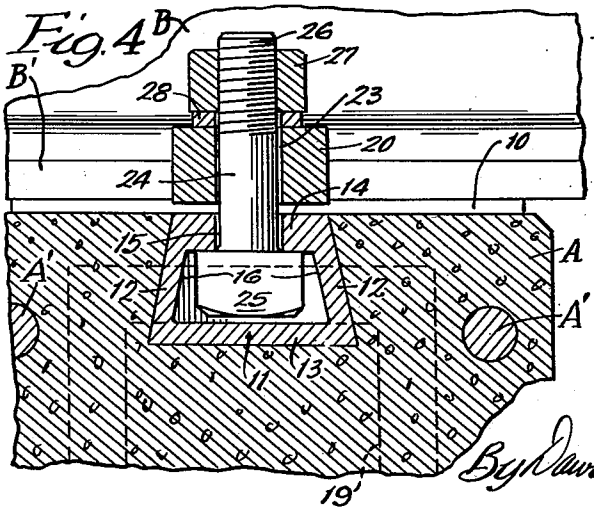
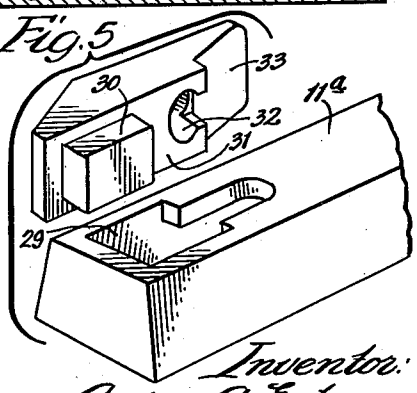


Fig. 5



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UNITED STATES PATENT OFFICE

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RAIL CHAIR

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3 Claims. (Cl. 238—346)

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This invention relates to a rail chair and more particularly to a rail chair which is incorporated in a concrete railway cross-tie for anchoring the rail to the tie.

An object of the invention is to equip a concrete or composition cross-tie with a rail chair having means secured thereto for locking the base flange of the rail to the tie. Yet another object is to provide a rail chair adapted to be embedded in a concrete cross-tie and equipped with means for releasably anchoring the rail to the tie. Still another object is to provide a concrete or composition cross-tie having one or two rail chairs embedded therein and supporting rails upon the tie, cooperating means carried by the rail chair being provided for adjustably securing the base flange of the rail upon the tie. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a single embodiment, by the accompanying drawings, in which—

Fig. 1 is a broken perspective view of apparatus embodying my invention; Fig. 2, a perspective view of the rail chair and clamp structure shown in separated relation; Fig. 3, a vertical sectional view, the section being taken as indicated at line 3 of Fig. 1; Fig. 4, a detail sectional view, the section being taken as indicated at line 4 of Fig. 3; and Fig. 5, a perspective view of a modified form of the invention, the rail chair and clamp parts being shown in separated relation.

In the illustration, A designates a concrete cross-tie and B designates a railway rail.

The cross-tie A may be formed of any suitable material and in any suitable shape. I prefer to employ concrete and to have the same reinforced. Reinforcing rods, in the structure illustrated, are designated by A^1.

The rail B is shown equipped with its usual base flange B^1 and rests upon a supporting strip 10 formed of hard rubber, hard wood, compressed fiber, or other suitable material.

Embedded within the concrete cross-tie is a rail chair 11, as shown more clearly in Fig. 2. In the specific illustration given, the chair 11 has side walls 12 flaring downwardly and outwardly and the bottom is closed by a bottom wall 13. The structure is provided also with a top wall 14 which extends across the central portion of the structure 11 and below the pad 10 and rail base flange B^1. The flange 14 is provided with central slots 15 which extend inwardly toward the center of the top wall 14. The top wall 14 is cut away near its ends to provide a recess 16 and the side walls 12 are also provided with notches 17 which provide locking teeth between the notches.

The rail chair 11 is preferably closed at its ends with end walls 18. The laterally flared walls 12 are effective in anchoring the rail chair within

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the concrete but I prefer to employ also a loop anchor 19 which has an upper arm extending through apertures in the side walls 12, as shown best in Fig. 2, and which has a depending loop structure engaged by the concrete for securing the chair 11 firmly within the cross-tie. It will be understood that chairs 14 may be placed near the opposite ends of the cross-ties to secure two rails thereon, as in the usual practice.

In Figs. 1 to 4 inclusive, I provide a clamp 20 having at its rear downwardly and rearwardly extending teeth 21 adapted to engage the notches 17 in side walls 12, as shown more clearly in Fig. 3. The said end of the clamp is provided with a jaw member 22 which is inclined slightly upwardly and is adapted to engage a broad surface of the rail base flange B^1, as shown in Figs. 1 and 3. The clamp 20 is provided centrally with an aperture 23 adapted to receive a bolt 24 having a head 25 confined within the interior of the rail chair 11 and having a threaded portion 26 extending above the clamp 20. A nut 27 may be employed for tightening the bolt in the position shown in Fig. 3, a spring or locking washer 28 also being employed, if desired. Any threaded structure for pressing the clamp 20 securely in the position shown may be employed.

Operation

In the operation of the device, the rail chair 11 is supported within the form of the concrete tie while the concrete is poured so as to provide a structure embedded within the concrete, as illustrated best in Figs. 1 and 3. The concrete cross-tie equipped with one, two or more of the rail chairs 11 may then be placed in position and the rails secured thereon. In securing a rail upon the cross-tie, the clamp 20 is pressed in position on each side of the rail, the teeth 21 being advanced to bring the forward jaw of the clamp firmly against the base flange of the rail B. The bolt 24 is correspondingly moved forward through the adjustment slot 15. The nut 27 is then tightened with a long wrench to secure the clamp firmly in position, as illustrated in Figs. 1 and 3.

With the structure shown, the rail can be laid quickly in position and secured rapidly by rotating the nuts 27. A firm grip of the jaw 22 is obtained by the teeth structure permitting the adjustment of the clamp.

It is common practice with the railroads to use a new rail of high grade on certain important main tracks for a number of years and then after the rails are somewhat worn, to remove the rails and to use them on other tracks where the traffic is not so heavy and the train speed not so high. Further, by reason of the great stress placed upon the rails today through the use of high speed heavy locomotives and cars,

it is desired to frequently replace even new rails which show signs of deterioration. With the present invention, the process of removing a rail and replacing it is extremely simple, requiring little labor and little time. The concrete cross-ties have a life span that is almost indefinite, and the rail chairs permit the installation and removal of a large number of rails, as needed.

It will be understood that the clamping structure and the rail chair structure may be modified considerably to meet different conditions. If desired, the adjustment teeth heretofore mentioned may be omitted and instead, the clamp may consist of a plug portion received within the end recess of the rail chair, the clamp being provided with the jaw and with the bolt passage.

In the modification given in Fig. 5, the rail chair *11a* has unserrated side walls and is provided with an end well **29** adapted to receive a depending plug or block **30** formed integrally with the clamp **31**. The clamp **31** is provided with the bolt opening **32** and with a forwardly extending jaw **33**. In this structure, the clamp is not adjustably mounted but is made to fit a particular structure and the block **30** serves to anchor the clamp within the recess **29** of the rail chair *11a*.

While in the foregoing specification, I have set forth a single structure in considerable detail for the purpose of illustrating embodiments thereof, it will be understood that such details of structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A rail chair adapted to be imbedded in a concrete body and comprising a box having bottom, side, end, and top walls, said top wall being continuous except at points adjacent the ends of the box where the top wall terminates and leaves a well therein, the central continuous portion of said top wall being of sufficient length to abut the full width a rail base flange support and be reinforced thereby, said top wall being provided at each end with an inwardly-extending slot, a bolt having its head received within said box and its shank extending through said slot at each end of said box, a pair of clamps each having a downwardly projecting plug portion shaped to be snugly received within one of said wells and thereby anchor said clamps within said wells, said clamps having also a forwardly-extending jaw adapted to engage the base flange of the rail, each of said clamps having an opening extending therethrough for receiving the shank of said bolts, and nuts engaging the outer ends of said bolts for confining said clamps upon said rail flange.

2. A rail chair adapted to be imbedded in concrete and comprising a hollow box having bottom, side, end, and top walls, said top wall terminating short of the end walls to provide a well therein, said top wall having a bolt-receiving slot extending inwardly from each well at each end of the box and providing a continuous surface between said slots adapted to support the entire base flange of a railroad rail and be reinforced thereby, a bolt having its head received within the box and its shank extending through the bolt slot at each end of the box, and a pair of clamps each having an anchor portion engageable with the well in the end of the box and each having a forwardly-extending jaw adapted to engage the base flange of a rail, said clamps being apertured to receive said bolts, and nuts engaging the outer ends of said bolts for confining said clamps upon said rail flange.

3. In combination with a railroad rail having an enlarged base flange, a chair for supporting said rail on the central portion of the top wall of said chair, said chair comprising a hollow box having bottom, side, end, and top walls, said top wall terminating short of the end walls to provide two wells therein, said top wall having a bolt-receiving slot extending inwardly from each well at each end of the box but providing a continuous surface between the inner ends of said slots for supporting said rail and being reinforced thereby, a bolt having its head received within the box and its shank extending through the bolt slot at each end of the box, and a pair of clamps each having an anchor portion engageable with the well in the end of the box and each having an upwardly-extending jaw engaging the top of the base flange of the rail, and nuts engaging the outer end of said bolts for confining said clamps upon said rail flange.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,018,305	Downs	Feb. 20, 1912
1,082,433	Miller	Dec. 23, 1913
1,187,284	Dozier	June 13, 1916
1,577,384	Stoye	Mar. 16, 1926