

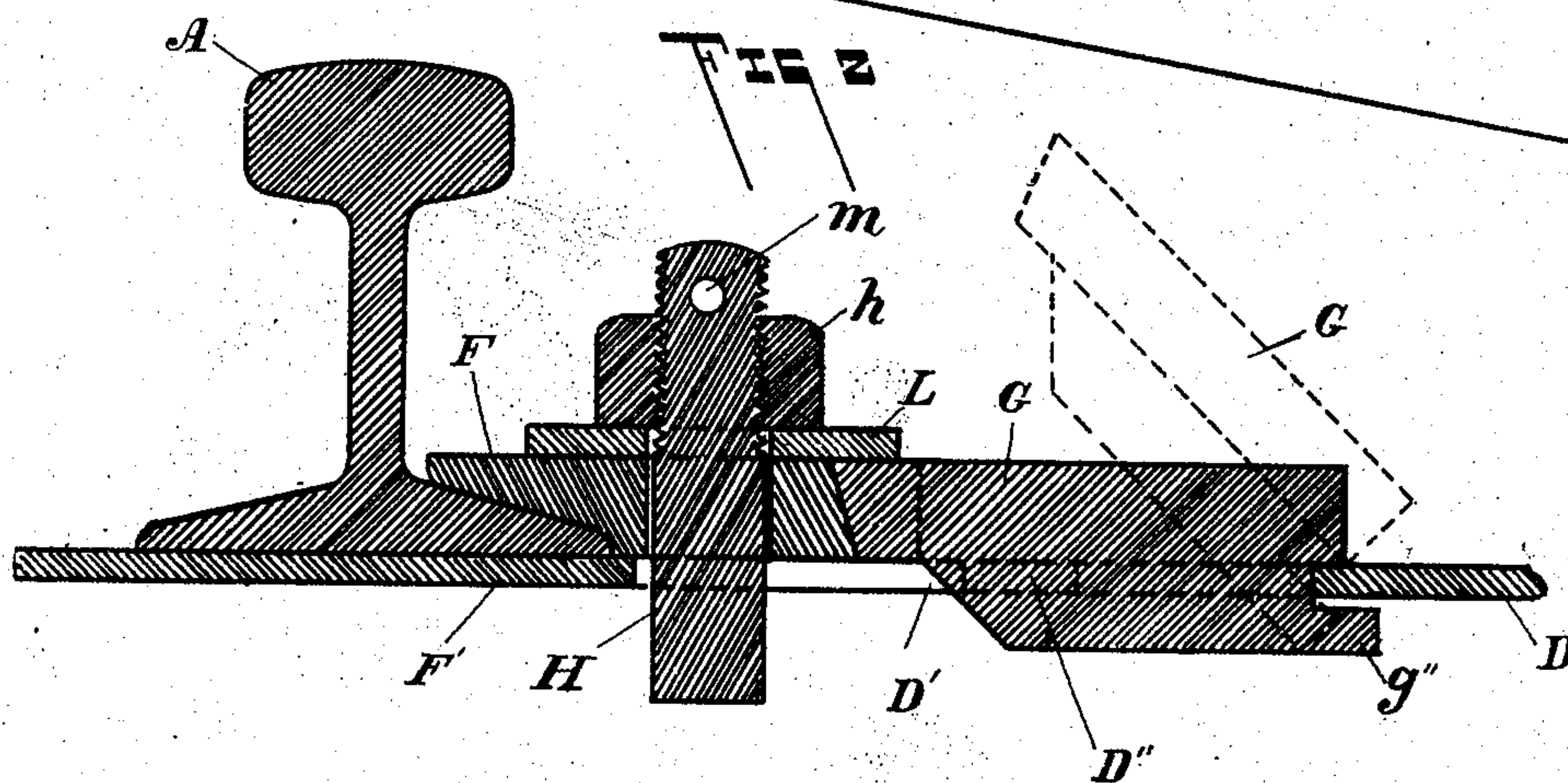
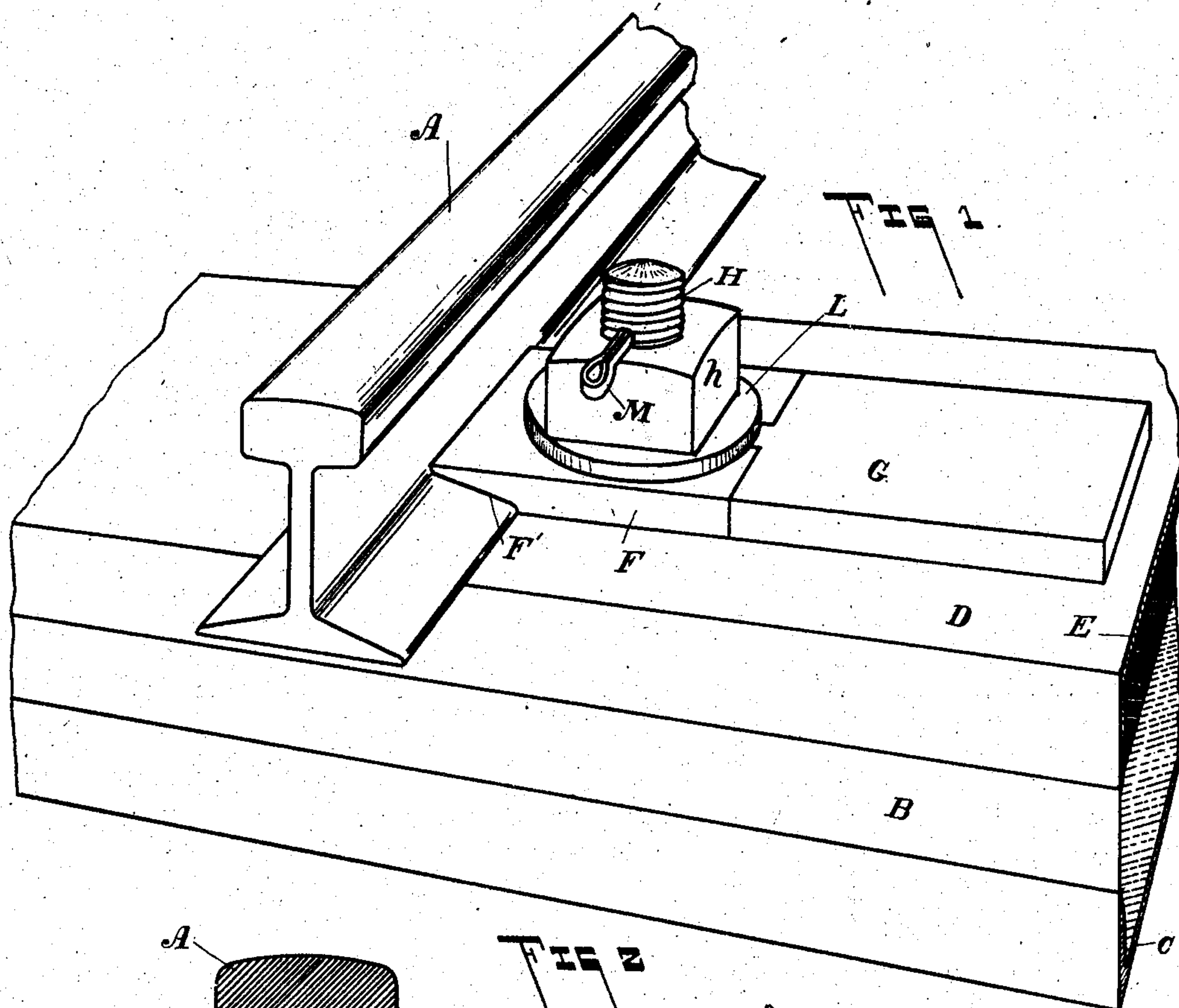
No. 787,049.

PATENTED APR. 11, 1905.

M. H. MAHAR.
RAILWAY TIE.

APPLICATION FILED JAN. 16, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

W. J. Cathcart.
J. S. Lee.

Matthew H. Mahar. INVENTOR

BY

Geo. B. Willcox. ATTORNEY

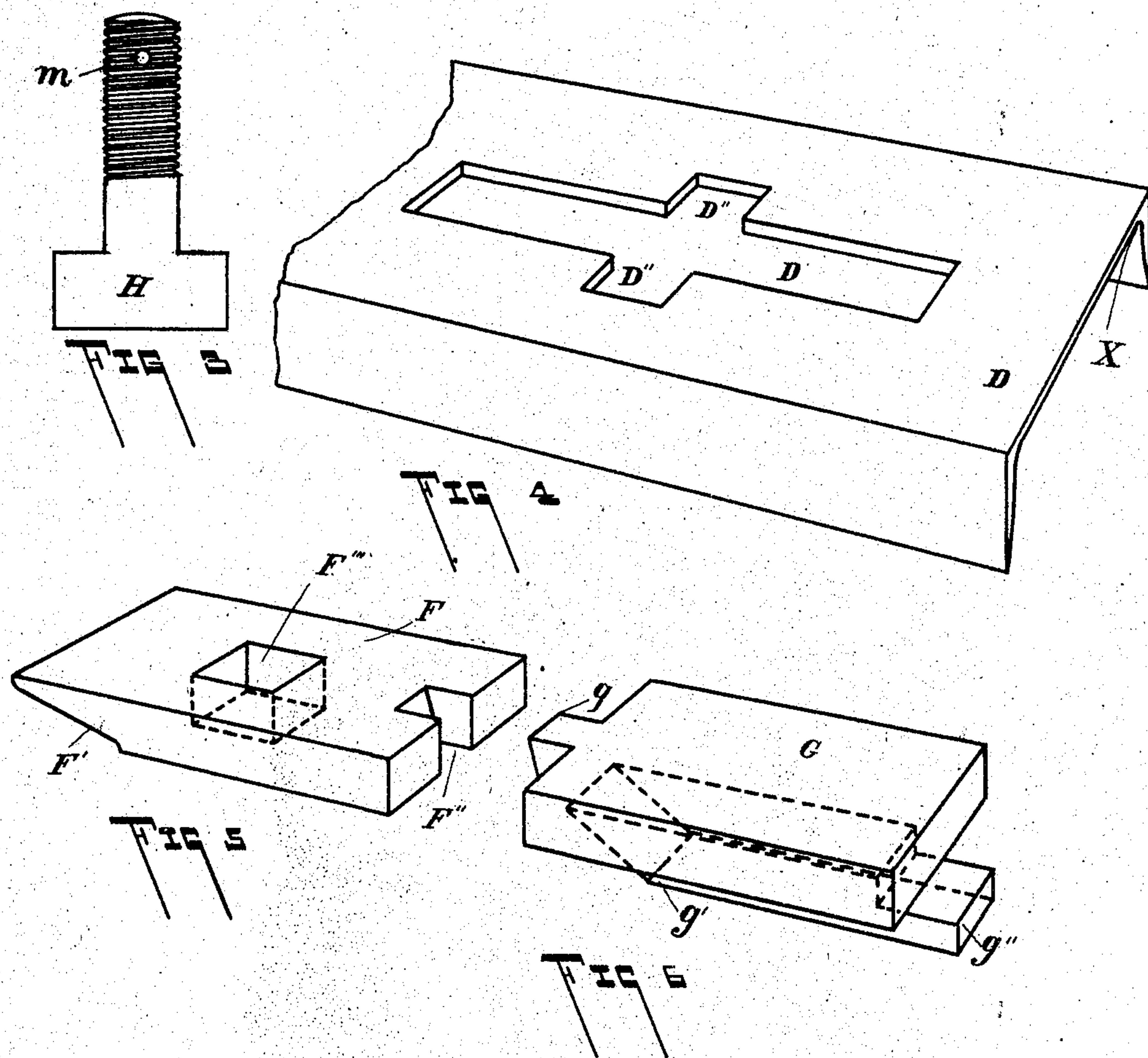
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UNITED STATES PATENT OFFICE.

MATTHEW H. MAHAR, OF WEST BAY CITY, MICHIGAN, ASSIGNOR OF ONE-THIRD TO JOHN A. DOWKER AND ONE-THIRD TO JAMES A. CARPENTER, OF BAY CITY, MICHIGAN.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 787,049, dated April 11, 1905.

Application filed January 16, 1905. Serial No. 241,275.

To all whom it may concern:

Be it known that I, MATTHEW H. MAHAR, a citizen of the United States, residing at West Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention is an improvement in cement ties and rail-fasteners, and refers more particularly to that form of tie which has strengthening-plates of steel partly or wholly surrounding it.

An object of my invention is to make a cement tie that is reinforced by steel plates on the top and bottom of the tie and which is also given a slight amount of compressibility by the interposition of a suitable elastic material immediately under the top plate.

Another object is to provide a fastener secured to the upper reinforcing-plate on the tie and having means for locking it in place after it has been tightened down against the flange of the rail.

Still another object is to so make the combination of tie and rail-fastener that the tie can be put in place and the rail secured to it without the use of gage-bars.

With these objects in view my invention consists in certain novel features of construction and their equivalents, which are described in the following specification and set forth in the claims.

In the accompanying drawings, Figure 1 is a perspective view showing my improved form of cement tie and rail-fastener. Fig. 2 is a transverse sectional elevation of the rail and a longitudinal sectional elevation of the rail-fastener and upper reinforcing-plate, taken through the center of the tie. Fig. 3 is an elevation of the bolt which is used to tighten the clip against the flange of the rail. Fig. 4 is a perspective of part of the upper reinforcing-plate, showing longitudinal and transverse

slots, the purpose of which will be hereinafter explained. Fig. 5 is a view of the clip, and Fig. 6 is a view of the locking-plate.

A is an ordinary steel T-rail, which is supported by the tie B. The tie B is preferably made of cement or its equivalent and is reinforced by plates C and D, which are secured to it and to each other by any suitable means. (Not shown in the drawings.) I prefer to use for these plates channel-iron of suitable size and cross-section or some other similar shape. In order to give the tie a certain amount of elasticity, I introduce a layer of some suitable elastic material E between the cement portion of the tie and the upper reinforcing-plate D. This is for the purpose of taking up shock and any vibration which may be caused by a heavy train passing over the road. In the upper reinforcing-plate D at a suitable distance from either end is a longitudinal slot D' of suitable dimensions, crossed at or near its center by a transverse slot D''. The purpose of these slots will appear later on.

The rail clip or fastener comprises a clip F, a locking-piece G, a bolt H with nut h, a suitable washer L, and cotter-pin M. The clip F may be of any suitable size and is preferably made of the general shape shown in Fig. 5. The contour of the under face F' of the forward end of the clip is like that of the lower flange of the T-rail A. At the rear end of the clip is a slot F'', which engages with the point g of the locking-piece G.

F''' is a square slot in the clip through which passes the T-headed bolt H.

G is a locking-piece of suitable size and shape, which is used to prevent the clip from moving away from the rail. It has a forwardly-extending point g, which engages with the slot F'' in the clip. The locking-piece also has a downwardly-extending web g', formed integral with it, and a rearwardly-extending arm g''. When the locking-piece is in position, this web projects down through the longitudinal slot D', as shown in Fig. 2. The arm g'' projects beneath the plate at the

rear end of the slot D', and thus prevents this end of the locking-piece from rising.

H is a T-head bolt, which together with the nut *h* holds the clip E in place. A cotter-pin
5 M is passed through a hole *m* in the upper end of the bolt, as shown in Fig. 1, and prevents the nut from becoming loose. A washer L is provided to tighten the nut against and
10 is large enough to overlap the point *g* and prevent the forward end of the locking-piece G from rising when the clip is in use.

If desired, a flanged nut may be used instead of the nut and washer described.

The operation of the fastener is as follows:

- 15 The rail being in position on the tie the head of the bolt H is passed down through the transverse slot D'' in the plate D and the bolt shoved forward to the end of the longitudinal slot D', the part of the tie immediately be-
20 low the slots D' and D'' having been cut away sufficiently to allow the bolt-head to move freely. The clip F is next slipped over the bolt H, the forward end being brought into engagement with the flange of the rail A.
25 After the clip F is in place the arm *g''* of the locking-piece G is inserted in the end of the slot D', as shown by dotted lines in Fig. 2, and the locking-piece dropped into place, so that the point *g* engages with the slot F''.
30 The washer L is placed over the bolt H and the nut *h* screwed down and tightened sufficiently to hold the clip F in place. The cotter-pin M is then driven through the hole *m*

in the bolt H, and the entire fastener is securely locked in place. 35

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The combination with a T-rail of a cement tie having upper and lower reinforcing-plates, said upper reinforcing-plate having 40 near either end transverse and longitudinal intersecting slots; a rail-fastener, comprising a clip in engagement with said T-rail, a locking-piece in engagement with said clip and said upper reinforcing-plate and means for 45 securing said clip to said reinforcing-plate.

2. The combination with a T-rail of a cement tie having upper and lower reinforcing-plates, said upper reinforcing-plate having 50 near either end transverse and longitudinal intersecting slots; a rail-fastener comprising a centrally-slotted clip, the forward end being in engagement with said T-rail, a locking-piece having a forwardly-extending point 55 in engagement with a slot in the rear end of said clip and having a downwardly and rearwardly projecting arm in engagement with said upper reinforcing-plate; and means for securing said clip to said reinforcing-plate 60 and tightening said clip against said T-rail.

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

MATTHEW H. MAHAR.

Witnesses:

A. A. EASTERLY,
W. I. CATHCART.