G. H. HARDMAN.

RAILROAD TIE.

APPLICATION FILED SEPT. 28, 1916.

1,214,914. Patented Feb. 6, 1917.

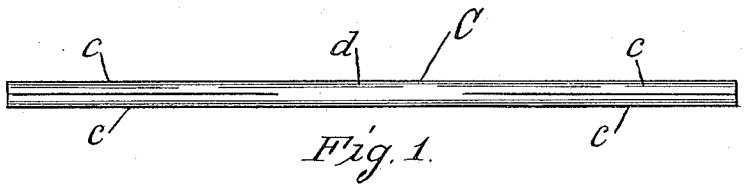


Fig. 1.

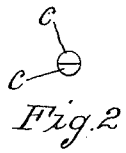


Fig. 2.

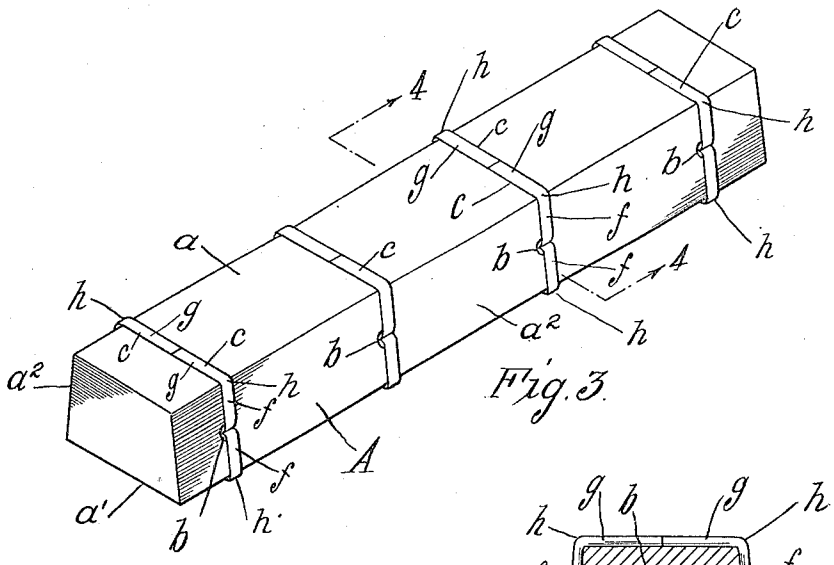


Fig. 3.

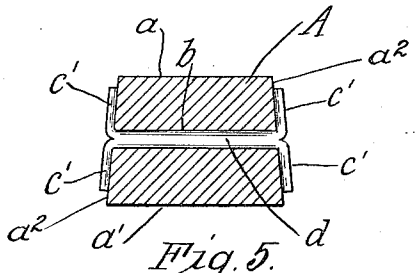


Fig. 5.

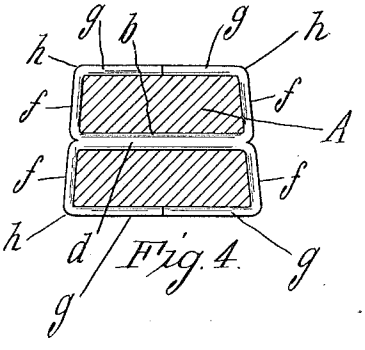


Fig. 4.

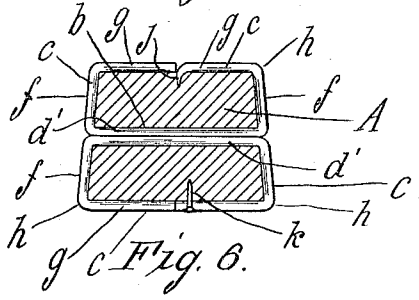


Fig. 6.

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RAILROAD-TIE.

1,214,914. Specification of Letters Patent. Patented Feb. 6, 1917.

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To all whom it may concern:

Be it known that I, GEORGE H. HARDMAN, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification.

My invention relates to railroad ties and has for its essential objects the prevention of buckling or splitting of the tie under excessive or continuous use or weight or from any other cause, to provide a means for this end that is easily applicable to tie, inexpensive, and possessing a maximum of strength.

To the above ends essentially my invention consists of such parts and combinations of parts as form the subject matter of the appended claims.

In the accompanying drawings which form a part of this specification,

Figures 1 and 2 are side and end elevations respectively of one of the clamping members,

Fig. 3, a perspective view of a railroad tie showing several clamping members engaged therewith,

Fig. 4, a transverse section of the same on line 4—4 of Fig. 3, and

Figs. 5 and 6, similar sections of modified forms of my invention.

Similar reference characters indicate like parts throughout the views.

In the drawings A is a railroad tie. In the present instance the upper face a, is narrower than the bottom face a', and the side faces a^2 are inclined. The cross-sectional contour of the tie, however, may be substantially rectangular or the sides may be convexed if preferred.

At intervals the tie is provided with a longitudinal series of transversely disposed bores or openings b extending to the opposite side faces a^2. In these holes or openings are inserted a series of clamping members C now to be described.

The latter is preferably formed of two metallic rods placed side by side with their intermediate portions d welded together to form an integral portion. This welding is either electric or autogenous. If desired the portion d may be originally a solid bar, and the portions c be bifurcated portions thereof, but such a construction is not preferred. While the portion d is preferably rigid, the portions c are bendable.

Each member c in the form thereof shown in Fig. 1, is inserted through a hole b midway its length so that the rod portion d is seated therein, and the members c project therefrom at each side of the tie. These bifurcated portions are next separated or distended and bent tightly around and over the adjacent portions of the tie faces. The bendable arms c, in the form shown in Figs. 3, 4, and 6 have portions f adjacent their bifurcation resting against the sides of the tie, and their end portions g extending along the top or bottom tie faces, thus forming bends h intermediate the length of the arms. In some instances it is found advantageous to employ auxiliary means to retain the portions g of the arms in unusually intimate engagement with the faces of the tie. This may be effected by inwardly bending a sharpened end j of the arm and driving it into the tie, or a rivet or nail k may be driven through the arm into the tie. Both of these fastening means are shown in Fig. 6.

A less effective form of my invention is shown in Fig. 5 wherein the arms c' are of reduced length and consequently do not have an intermediate bend. It is well known that it is the sides of the ties that are subject to the greatest relative strain, so that unless the weight on the tie is excessively great the arms c' are very effective.

Another modified form of the invention which is useful, as shown in Fig. 6, consists in substituting for the integral rod d separate rods d' with their surfaces in contact side by side.

I do not desire to be limited to the exact details of construction shown and described, for such changes or modifications may be made in practice as fairly fall within the scope of my invention as claimed.

I claim,—

1. In a railroad tie, the combination of a body provided with a hole extending therethrough, a rod seated in the hole, and clamping arms upon both ends of the rod engaging the exterior of the body.

2. In combination, a railroad tie comprising a non metallic body provided with a hole extending transversely therethrough, a rod seated in the hole, and clamping arms

upon the rod embracing the exterior of the tie.

3. In a railroad tie, the combination of a body provided with a hole extending therethrough, a rod seated in the hole and flexible clamping arms on both ends of the rod embracing the body.

4. In a railroad tie, the combination of a body provided with a hole extending therethrough, a rod seated in the hole, and diverging arms on the ends of the rod engaging the adjacent exterior faces of the body.

5. In a railroad tie, the combination of a body provided with a longitudinal series of transversely disposed holes, rods in the holes extending from side to side of the body, and diverging clamping arms integral with the ends of the rods overlapping the exterior of the body.

6. In a railroad tie, the combination of a body provided with a transverse hole, a rod seated in the hole, and clamping arms on both ends of the rod partially surrounding the body and provided with intermediate bends to conform to the surface of the body.

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

GEORGE H. HARDMAN.

Witnesses:
FREDERIC F. BERGERON,
LLOYD A. DAVIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."