W. H. DECKER.

RAIL HOLDING DEVICE.

APPLICATION FILED MAR. 3, 1917.

1,264,616. Patented Apr. 30, 1918.

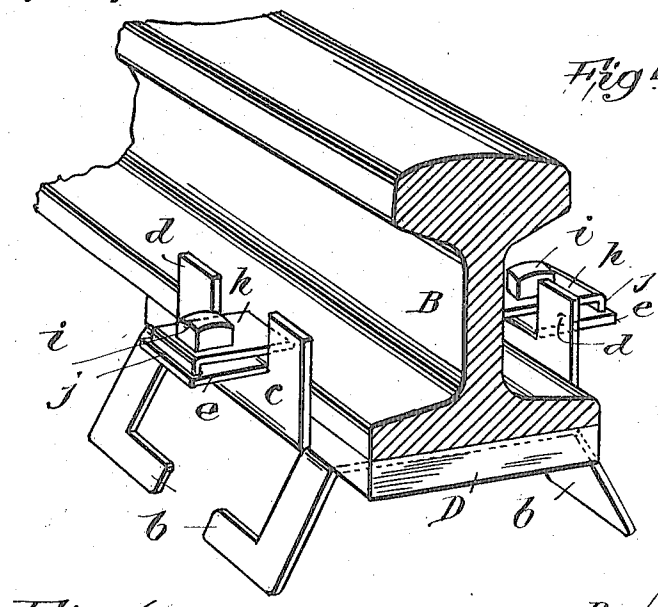


Fig. 1.

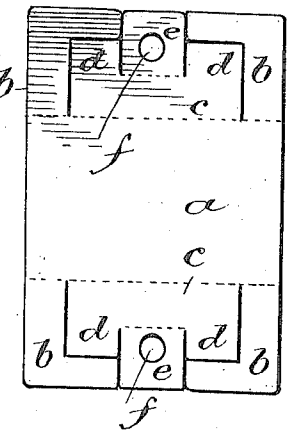


Fig. 4.

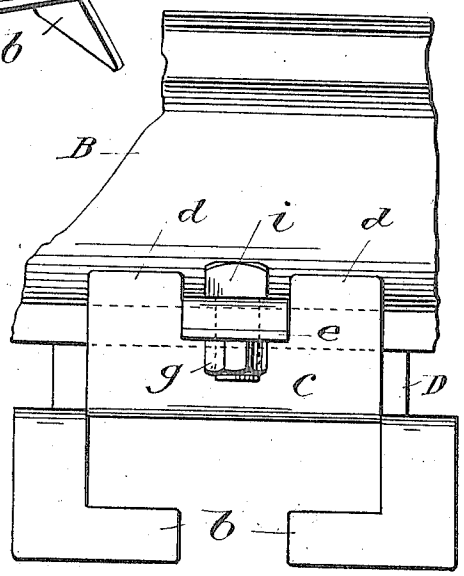


Fig. 3.

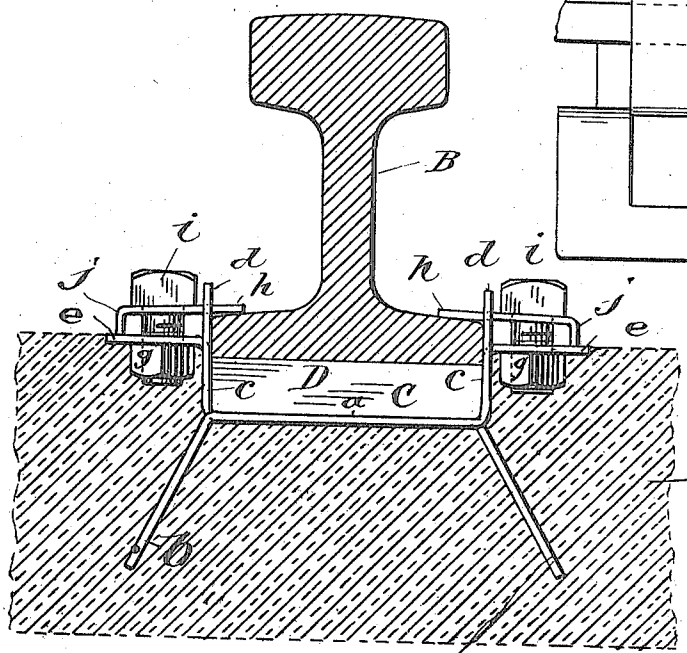


Fig. 2.

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UNITED STATES PATENT OFFICE.

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RAIL-HOLDING DEVICE.

1,264,616. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed March 3, 1917. Serial No. 152,184.

To all whom it may concern:

Be it known that I, WILLIAM H. DECKER, a citizen of the United States, residing at Skaneateles, in the county of Onondaga and State of New York, have invented a new and Improved Rail-Holding Device, of which the following is a specification.

My invention relates to means for holding railway rails in place upon cement ties. As is well known owing to the continually increasing cost of wood ties due to the growing scarcity of timber, a serviceable substitute for such ties has long been desired. A tie formed of molded material as cement or concrete, is in many ways admirably adapted for the purpose, being strong, imperishable and easily formed. Such ties, however, have not heretofore been used since no practicable means has been devised for holding the rails securely in place thereon. The object of my improvements is to supply this want and supply a simple and inexpensive device for holding the rails permanently and securely in place upon ties formed of cement.

To this end my invention consists of the device hereinafter described and claimed and illustrated in the accompanying drawings by reference to which it will be best understood.

Figure 1 of the drawings shows a perspective view of the rail holding device with a rail in place thereon. Fig. 2, shows a cross vertical section of a cement tie and rail and an end view of the rail holding device in place on the tie. Fig. 3 shows a side view of the rail holding device and rail and Fig. 4 a plan view of a metal plate from which the rail holding device may be formed.

Referring to the drawings, A indicates a railway tie formed of cement or concrete, B a rail supported thereby and C a saddle of sheet metal which is secured to the tie and by means of which the rail is held in place thereon. The saddle, C, is most conveniently and economically formed from a single sheet or plate of suitable metal, as sheet steel or wrought iron, shown in Fig. 4, by cutting through the sheet upon the full lines in said figure and then bending it upon the dotted lines, so that the several parts will take the positions shown in Fig. 1. The plate, as thus cut and bent, will present a base, *a*, four downwardly extending lugs or legs, *b*, *b*, *b*, *b*, forming anchors when the device is in place, two upwardly extending portions, *c*, *c*, forming vertical extensions of the base and having ears *d*, *d*, *d*, *d*, and two horizontally projecting portions, *e*, *e*, lying between the ears, *d*, *d*, and provided with bolt holes *f*, *f*.

In applying the saddles, C to a tie they are inverted from the position shown in Fig. 1, and placed in the mold in which the tie is formed, so that one will be located near each end of the tie and with their centers spaced apart the distance between the centers of the rails. Nuts, *g*, *g*, are then placed in position over the bolt holes, *f*, *f*. The tie is then formed by filling the mold with cement, so that the legs, *b*, *b*, *b*, *b*, project into the cement, which also lies against the outer surfaces of the parts, *c*, *c*, and against the upper surfaces (as they lie in the mold) of the ears, *e*, *e*, the relation of the several parts to the cement being as shown in Fig. 2. The ears, *d*, *d*, should project downward through openings in the bottom of the mold so that the lower surfaces of the ears *e*, *e*, will rest on the bottom of the mold.

The base portion, *a*, of the saddle, C, lies below the upper surface of the tie and the upstanding parts, *c*, *c*, are held rigidly in position by the cement or concrete on the outer sides thereof.

Before placing the rails in place on the ties blocks D, of vibration-absorbing material, as wood, compressed paper, or similar material, upon which the rails, when in place, rest, are placed upon the saddles, C, between the upstanding parts, *c*, *c*, whereby the transmission of vibration from the rail to the tie and holding device is decreased. The upstanding portions, *c*, *c*, of the saddle, C, are so spaced apart as to just receive between them the base of the rail, when the latter is in position, and closely engage the outer surfaces of the base flanges. When the rails are in place clamping fingers, *h*, *h*, the inner ends of which rest upon the upper surfaces of the rail base flanges, are put in place between the ears, *d*, *d*, and secured by bolts, *i*, *i*, which engage the nuts, *g*, *g*, embedded in the cement below the plates, *e*, *e*, as above explained. It will be evident that, if desired, instead of placing the nuts, *g*, *g*, in position before casting the tie, the bolt heads may be placed in the same position with the threaded portion of the bolts projecting through the bolt holes, *f*, the nuts being afterward applied to the upper end of the bolts. The clamping fingers, *h*, are provided at their outer ends with downwardly projecting flanges, *j*, which bear against the up-

per surfaces of the plates, *e*. By this form of construction, the clamping fingers are given some degree of elasticity and the tendency of the vibration of the rail to disintegrate the tie is minimized. At the same time the clamping fingers are held securely in place in their predetermined positions and prevent any upward movement or tipping of the rail. Lateral movement of the rail is prevented by the parts, *c*, *c*, which are backed by the body of the tie itself. Any tendency to lateral displacement is further resisted by the downward thrust of the plates, *e*, *e*, upon the surface of the tie.

It will be observed that the predetermined location of the rail holding device in relation to the tie enables the ready and accurate location of the rails in laying the track, an advantage which will be readily apparent to those skilled in the art.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a molded railway tie of a rail holding device comprising a base plate located below the upper surface of the tie and having anchors formed integral with the base-plate extending downwardly into the body of the tie and vertical extensions formed integral with the base-plate and located intermediate said anchors backed by the tie material and adapted to embrace the rail base.

2. The combination with a molded railway tie of a rail holding device comprising a base-plate located below the upper surface of the tie and having anchors formed integral therewith extending downwardly into the body of the tie, vertical extensions of the base plate formed integral therewith and located intermediate said anchors backed by the tie material and adapted to embrace the rail base, and horizontally disposed plates formed integral with said vertical extensions and resting on the surface of the tie.

3. The combination with a molded railway tie of a rail holding device comprising a base plate located below the upper surface of the tie, L shaped anchors formed integral with the base plate and extending downwardly and horizontally in the body of the tie and vertical extensions of the base plate formed integral therewith located intermediate said anchors.

4. The combination with a molded railway tie of a rail holding device comprising a base plate located below the upper surface of the tie, L shaped anchors formed integral with the base-plate and extending downwardly and horizontally in the body of the tie and means connected with the base plate for holding the rail in place.

5. The combination with a molded railway tie of a rail holding device formed from a single sheet of metal and comprising a base plate, anchors embedded in the tie, vertical extensions of the base plate adapted to embrace the rail base and horizontal portions resting upon the upper surface of the tie.

In testimony whereof I have affixed my signature, this 6th day of February 1917.

WILLIAM H. DECKER.

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