J. V. BERGEN.

RAIL FASTENING DEVICE.

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986,348.

Patented Mar. 7, 1911.

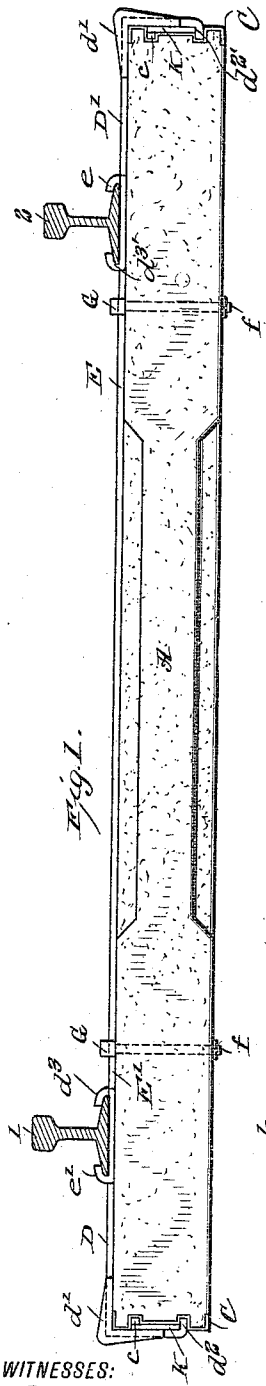

Fig. 1.

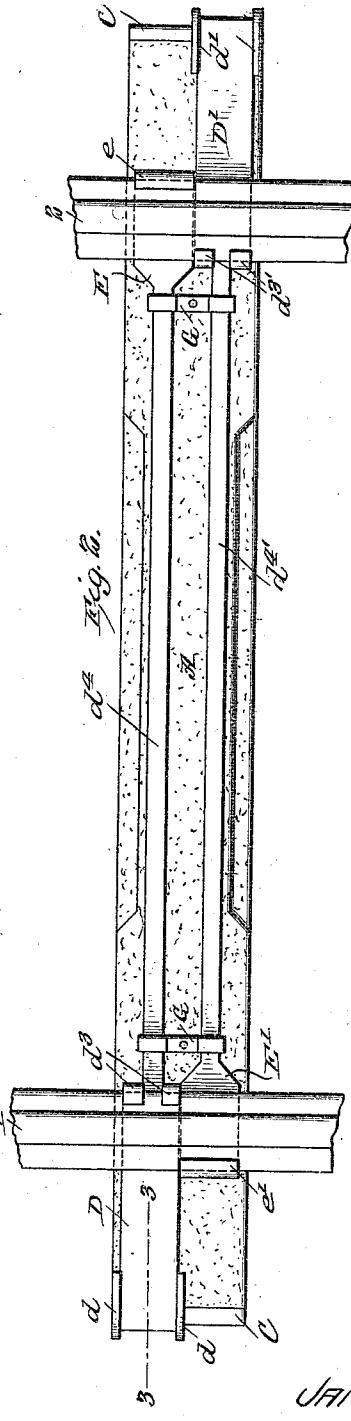

Fig. 2.

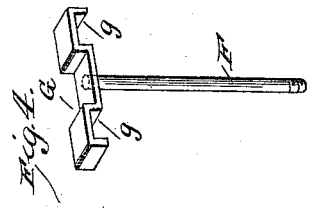

Fig. 4.

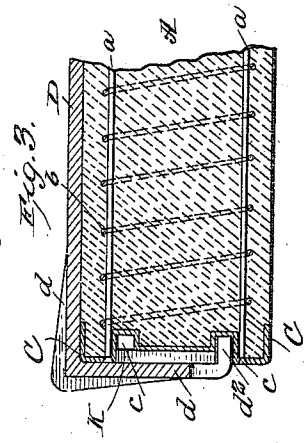

Fig. 3.

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RAIL-FASTENING DEVICE.

986,348. Specification of Letters Patent. Patented Mar. 7, 1911.

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To all whom it may concern:

Be it known that I, JAMES V. BERGEN, a citizen of the United States, and a resident of El Paso, in the county of El Paso and State of Texas, have invented certain new and useful Improvements in Rail-Fastening Devices, of which the following is a specification.

My invention relates to improvements in rail fastenings adapted to steel, concrete or composition railway ties, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide rail fastening and means for clamping rails to steel, concrete or composition railway ties without the use of bolts, screws, spikes or similar devices entering into the body of such ties and preventing the force of impact blows upon the rails being concentrated at the point of rail contact.

A further object of my invention is to provide a device by means of which the rails may be clamped to the tie in such a manner as to bring the strains on the ends of the tie instead of transverse thereto.

A further object of my invention is to provide fasteners which positively lock the two rails together holding the same to alinement and gage as well as securely locked upon the tie, while at the same time acting to distribute the force of impact of passing wheels over considerable surface at the end of the tie.

A further object of my invention is to provide a fastening for a steel, concrete or composition tie made rectangular in shape at its ends and rail bearings which is reversible end for end, or bottom for top, as desired.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the tie, the rails being shown in sections. Fig. 2 is a plan view, Fig. 3 is an enlarged section along the line 3—3 of Fig. 2, and Fig. 4 is a perspective view of the bolt and strap for securing the clamps to the upper part of the tie.

In carrying out my invention, I provide a tie of the form shown in the drawing. This, if a concrete or composition tie, consists of a body portion A having embedded therein reinforcing bars *a* around which is wound turns of wire *b*. The tie is preferably of octagonal shape along its middle portion, as shown in Figs. 1 and 2. At the ends of each tie is a plate C which is bent to form two recesses *c*.

The rail clamps comprise a metal plate D provided with side flanges *d*, or other excess of metal to reinforce the angle. This plate has an extension at its end as shown at $d^{2\prime}$ which has a portion d^2 bent inwardly. The portion d^2 is designed to enter one of the recesses *c*. The opposite end of the plate D has two bent portions forming retaining members for the base of the rail. These retaining members are shown at d^3. Between the members d^3 is an integral connecting portion d^4 which terminates in a plate E which is bent up at its end *e* to form a retaining member for the opposite rail.

As will be seen from Figs. 1 and 2, the companion clamping members D′, E′, etc., are turned in the opposite direction. Thus, the retaining member *e′* of the plate E′ is in engagement with the rail 1, while the retaining members $d^{3\prime}$ are in engagement with the rail 2.

In Fig. 4 I have shown means for retaining the clamping members in their proper position. This comprises a bolt F passing through a plate G having recesses *g* adapted to receive the members d^4 and $d^{4\prime}$ said bolt also passing through the body of the tie.

From the foregoing description of the various parts of the device the operation thereof may be readily understood. In placing the rails upon the ties the clamping members which have been arranged on the rails, are slid along until their ends d^2 and $d^{2\prime}$ register with the recesses *c* into which they pass. A wedge K is now driven in between plate C and the downwardly turned end of the member D thus drawing the clamping member toward the end of the tie and causing the retaining members d^3 and *e* to engage the base flanges of the rails 1 and 2. The companion clamping member is then brought into position and a wedge K is driven home so as to bring the retaining member *e′* and $d^{3\prime}$ into engagement with the rails 1 and 2 respectively, clamping them securely between these retaining members and their companion retaining members d^3 and *e*. In order to further secure the clamping members the bolts F are

passed through pipes in the tie, the straps G fitting over the clamping members and securely binding them to the tie when the nuts *f* are turned to force the straps downwardly. The bolts F being fitted loosely can have the nuts either above or below the tie.

From the description of the tie, it will be seen that the rails are really held by the ends of the ties so that the force of impact is taken up by the ends of the ties largely. If the tie should become worn on top, it may be reversed and the rail secured on the other side, since the retaining members d^2 and $d^{2\prime}$ will now enter the other recesses *c*.

I claim:

1. In a tie for railways, a main body portion provided with recesses, a clamping member comprising a plate adapted to lie on top of the tie and having an extension at one end provided with a bent portion adapted to enter one of said recesses, retaining members adapted to engage the rails, and a wedge for drawing said retaining members into engagement with the rail.

2. In a tie for railways, a main body portion provided with recesses, a clamping member having a bent portion at one end adapted to enter one of said recesses, retaining members adapted to engage the rails, and a wedge for drawing said retaining members into engagement with the rail.

3. In a tie for railways, a main body portion provided with recesses at its ends, a clamping member comprising a plate adapted to lie on top of the tie and having an extension at one end provided with a bent portion adapted to enter one of said recesses, retaining members carried by said clamping member, and a wedge adapted to be driven between the end of the tie and the lateral extension of said clamping member for forcing said retaining members against the rail.

4. In a tie for railways, a main body portion provided with plates at its ends having recesses therein, a pair of clamping members each comprising a plate adapted to lie on the top of a tie having an extension at one end provided with a bent portion adapted to enter one of said recesses, retaining members carried by said clamping member, said clamping members being secured by said extension at opposite ends of the tie, and wedges adapted to be driven between the end plates and the extension of said clamping members for forcing the retaining members of each of said clamping members in opposite directions, thereby clamping the rails.

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