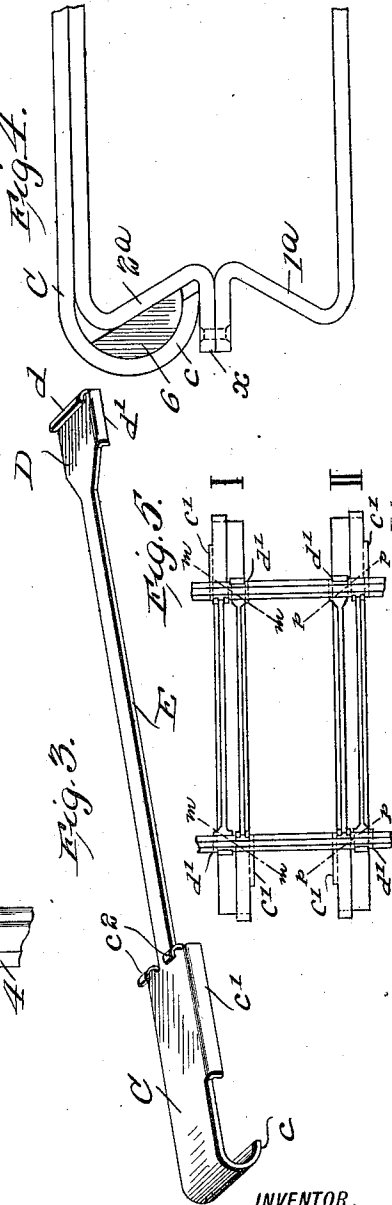
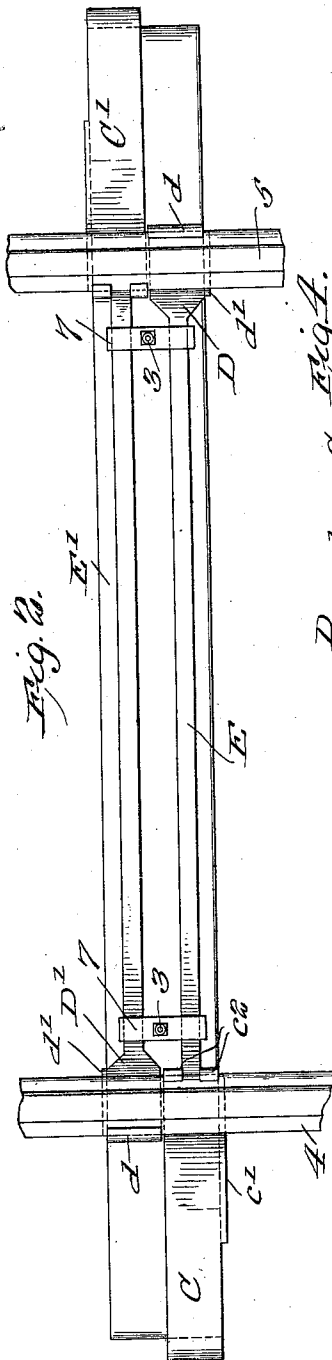
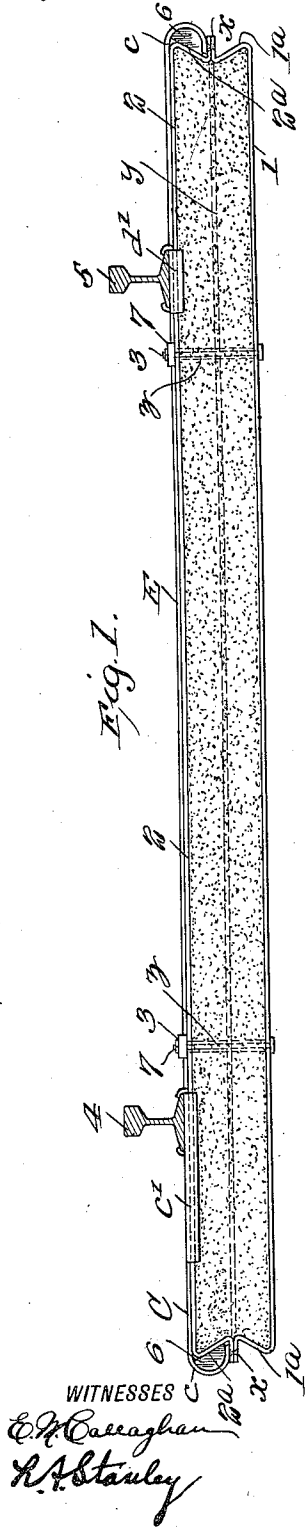


J. V. BERGEN.
RAIL TIE AND FASTENING DEVICE.
APPLICATION FILED JUNE 1, 1911.

Patented Jan. 23, 1912.

1,015,535.



INVENTOR
JAMES V. BERGEN
BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES V. BERGEN, OF EL PASO, TEXAS.

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Specification of Letters Patent.

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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 made certain new and useful Improvements in Rail Ties and Fastening Devices, of which the following is a specification.

My invention relates to improvements in railroad cross ties and means for fastening rails thereto and consists in the combinations, constructions and arrangements herein claimed.

The object of my invention is to provide a composite tie which may be reversed end for end and bottom for top.

A further object of my invention is to provide a tie made of reinforced concrete or other similar material in which there is economy of material in the metal parts, the latter being cheaply manufactured, but serving to render the tie strong and durable.

A further object of my invention is to provide a tie having means for preventing the creeping of rails.

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

My invention is illustrated in the accompanying drawings forming part of this specification in which similar reference characters indicate like parts in the several views, and in which,

Figure 1 is a side view showing one embodiment of my invention; Fig. 2 is a plan view of the tie and fastening devices; Fig. 3 is a perspective view of one of the rail clamps, and Fig. 4 is an enlarged detail view of the ends of the metal frame members and clamp. Fig. 5 is a plan view showing a pair of adjacent ties with right and left rail clamping devices fastened thereto.

In carrying out my invention, I provide two metal strips such as those shown at 1 and 2 in Fig. 1. These strips are bent at their ends in a Z-shaped form as shown at 1^a and 2^a and their abutting flanges *x* are riveted together. The frame thus formed constitutes a mold which may be filled with cement or asphalt concrete or other approved composition and reinforced with rods, wire or expanded metal such as that shown at *y*. Before the concrete is placed within the frame, sleeves *z* extending from one plate to

the other are provided in order to accommodate bolts 3.

For each tie there are two rail clamps of the form shown in Fig. 3. The clamp is provided at one end with a downwardly curved flange *c* which is integral with the body portion C. The latter has a downwardly turned flange *c'* on one side and two upwardly turned flanges *c*². The opposite end of the clamp has a body portion D having an upwardly turned end flange *d* and a downwardly turned side flange *d'*. The two end portions are connected together by an integral strip E. The description of one clamp will serve for both since they are precisely like the form.

From the description of the main parts of my invention, the operation thereof may be readily understood.

As will be seen from Fig. 2, the clamp comprising the portions C, E, D is placed so that its end flange *c* abuts one end of the tie. The upturned flanges *c*² engage the flanges of the rail 4 on the inside while the flange *d* engages the outside flange of the rail 5, the flanges of the body portion C' engaging the inner flange of the rail 5 while the flange of the end portion D' engages the outer flange of the rail 4. New by driving wedges such as those shown at 6 between the portions 2^a of the plate 2 and the flanges corresponding to *c*, the two rail clamps are wedged so as to hold the rail securely in place. In order to further bend the clamping devices to the tie, I make use of the plates 7 which are held by the bolts 3 and which overlie the connecting portions E and E' of the clamps.

It will be noted that each clamp is provided with flanges similar to those shown at *c'* and *d'* in Fig. 3. These flanges extend over the side of the tie and being placed right and left as shown in the drawing, they prevent any creeping of the rails upon the tie. It will be seen that I have provided a device of comparatively simple construction and yet which is strong and durable. The rail clamp may be readily removed by knocking out the wedges, and if for any reason it should be desirable, the tie may be turned top for bottom or end for end.

In Fig. 5 I have shown the manner of arranging the rail clamping devices. These members are to be made right and left, *i. e.*, the flanges *c'* and *d'* are on the right hand

side of the clamping devices when looking from the larger toward the smaller end, *i. e.*, when looking from C to D. The tie I I and flanges *c'* and *d'* are on the left hand side of the clamping device when looking from the larger to the smaller end. Consider the effect of the clamping devices when applied to the tie I. They tend to turn the rail in the direction indicated by the dotted lines *m—m*, while the adjacent tie I I will tend to turn the rail in the direction indicated by the lines *p—p*. The alternate ties are arranged with the same clamping devices, *i. e.*, they are right or left and the tendency of the clamping devices on one rail is to counteract the effect of that on the other. There is thus a wedging action on the rail, and this together with the fact that the flanges extend downwardly on the sides of the tie eliminates the possibility of slipping of the rail. I consider this as one of the important features of my invention.

I claim:—

1. In a rail tie and fastening device, a frame comprising a pair of metal strips having end flanges turned inwardly toward each other, means for fastening said end flanges together, a body portion comprised of plastic material molded in said frame, a clamping member comprising a plate adapted to lie on the top of the tie and having a curved flange at one end arranged to engage the end of the frame plate, retaining flanges for engaging the rails, and downwardly extending flanges for engaging the sides of the tie, and means for forcing said retaining flanges into engagement with the rails.

2. In a rail tie and fastening device, a frame comprising a pair of metal strips, said metal strips having their ends bent into a Z-shaped form to provide recesses and

flanges, the flanges of one of said strips being secured to the flanges of the other and said pair of strips constituting a frame, a body of plastic material molded in said frame, a clamping member comprising a plate having a curved end flange arranged to enter the recess in one of said frame plates, said clamping member being also provided with upwardly turned retaining flanges for engaging the rails and downwardly turned flanges for engaging the sides of the tie, and a wedge arranged to be driven between the curved end flange of the clamping member and the Z-shaped bend at the end of the frame plate.

3. In a rail tie and fastening device, a frame comprising a pair of metal strips, said metal strips having their ends bent into a Z-shaped form to provide recesses and flanges, the flanges of one of said strips being secured to the flanges of the other and said pair of strips constituting a frame, a body of plastic material molded in said frame, a pair of oppositely disposed clamping members adapted to lie on the top of the tie, each of said clamping members comprising a plate having a curved end flange arranged to enter the recess at the end of the tie and being also provided with upwardly turned retaining flanges arranged to engage each of the rails and having downwardly extending flanges arranged to engage the opposite sides of the tie, and wedges adapted to be driven between the curved end flanges of the clamps and the Z-shaped ends of the tie for forcing said clamps in opposite directions so as to cause their retaining members to grip the rails.

JAMES V. BERGEN.

Witnesses:

RUTH WILLIAMS,
E. A. PEAVY.