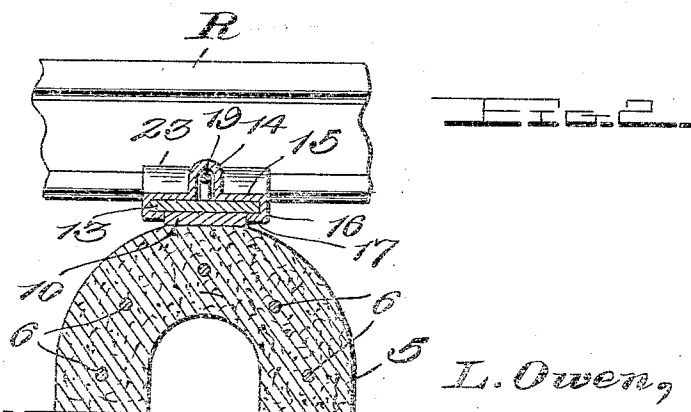
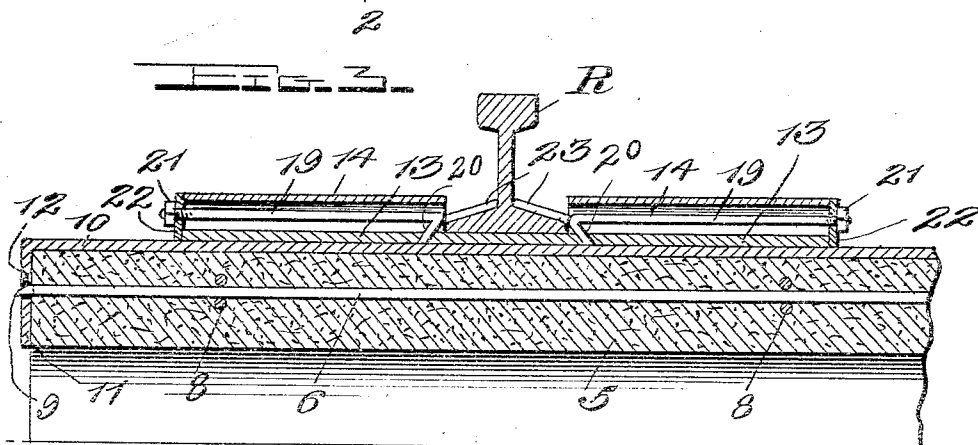
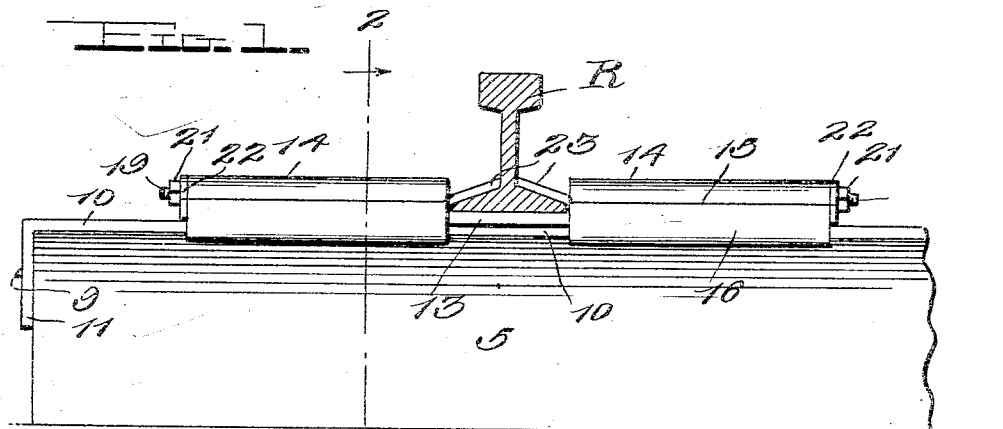




Witnesses

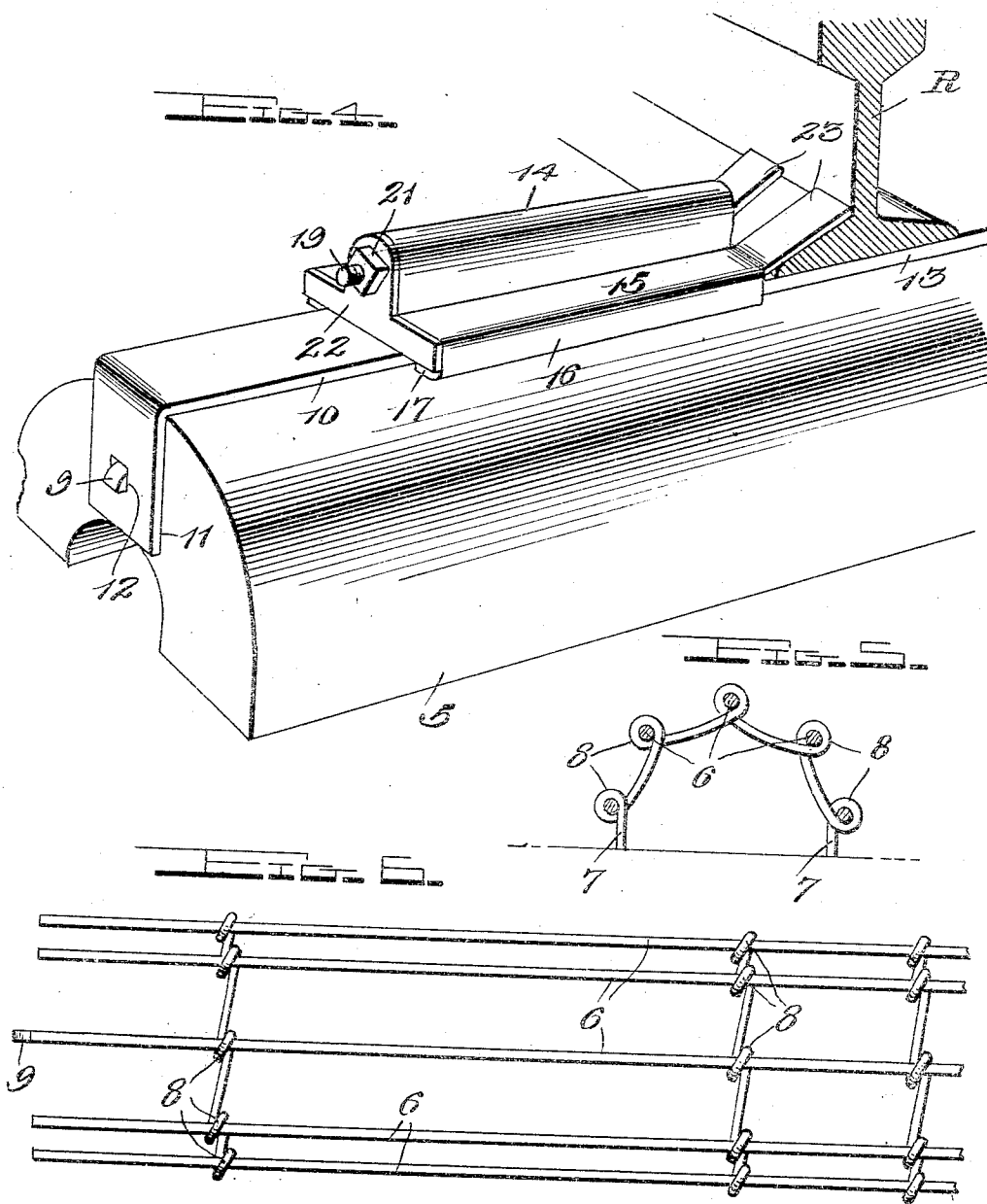
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1,055,216.

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RAIL-TIE AND FASTENER.
APPLICATION FILED SEPT. 5, 1912.

Patented Mar. 4, 1913.
2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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RAIL TIE AND FASTENER.

1,055,216.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed September 5, 1912. Serial No. 718,731.

To all whom it may concern:

Be it known that I, LAFE OWEN, a citizen of the United States, residing at Lawton, in the county of Comanche and State of Oklahoma, have invented certain new and useful Improvements in Rail Ties and Fasteners, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to rail ties and fasteners and has for its primary object to produce a hollow rail supporting tie constructed of plastic material, and improved reinforcing or strengthening means arranged within the hollow of the tie.

15 Another and more specific object of the invention resides in the provision of a hollow tie, a series of longitudinal reinforcing rods and a plurality of tie rods connecting the same, a tie plate arranged upon the tie and having its ends extended downwardly over the ends of the tie, one of the reinforcing rods projecting beyond the ends of the tie and coöperating with the tie plate to

20 lock the same upon the tie. A further object of the invention resides in the provision of a rail fastener of improved form whereby the rails may be easily, quickly, and securely fastened upon the tie.

30 Still another object of the invention is to provide a device of the above character which is simple in construction, extremely strong and durable in use and may be manufactured at comparatively small cost.

35 With the above and other objects in view as will become apparent as the description proceeds, the invention consists in certain constructions, combinations and arrangements of the parts that I shall hereinafter

40 fully describe and claim. For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which—

45 Figure 1 is a side elevation of a rail supporting tie and fastener embodying the present invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged longitudinal section of one end of the tie; 50 Fig. 4 is a perspective view showing one of the fastening members in position upon the rail; Fig. 5 is an enlarged end elevation of the tie reinforcement; and Fig. 6 is a top plan view thereof.

55 Referring in detail to the drawings 5 designates the tie which is constructed of con-

crete or other plastic material and is hollow or of inverted U-shaped form in cross section as clearly shown in Fig. 2. This plastic tie is strengthened by means of the reinforcement shown in detail in Figs. 5 and 6. This reinforcement consists of a plurality of parallel longitudinal rods 6. Tie rods 7 connect these longitudinal rods, said tie rods being each provided with spaced eyes 8. These eyes are of uniform size and are arranged in the form of a semi-circle. The rods 6 are disposed through the corresponding eyes in the series of tie rods 7 and the central one of these rods 6 is somewhat longer than the remaining rods 6 so that the same projects at its ends beyond the ends of the tie as clearly shown in Fig. 3. The extremities of this longer rod are beveled or inclined downwardly and outwardly as indicated at 9 for a purpose which will be clearly seen from the following description. The semi-circular arrangement of the longitudinal bars 6 and the eyes 8 in which they are supported produces a maximum of strength 80 in the tie, the pressure upon the longitudinal rods being directed toward the center of the hollow tie. This reinforcement is of course embedded in the plastic material when the same is molded to form the tie in the usual 85 manner.

My improved fastening means for the rails which is designed to be employed in conjunction with the tie constructed as above described, embodies the tie plate 10 90 which extends longitudinally upon the upper surface of the tie and has its ends angularly bent to extend downwardly over the ends of the tie as indicated at 11. These downwardly extending ends of the tie plate 95 are provided with rectangular openings 12 to receive the ends of the central reinforcing rod 6 which projects beyond the ends of the tie. In placing the tie plate in position on the tie, the extremities of said plate engage 100 the beveled or inclined surface 9 on the ends of the rod 6 and ride over the same. When the tie plate is forced into engagement upon the upper surface of the tie, the ends of the rod 6 will be received in the openings 12, 105 thereby locking said plate in position.

Upon each end of the tie plate 10 and on the upper surface of the same, a chair plate 13 is welded or secured in any other preferred manner. This chair plate is of 110 slightly greater width than the tie plate 10 so that the same overlaps the longitudinal

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edges of the tie plate. Upon the plate 13 my improved rail fasteners are arranged. Each of these fasteners consists of a steel plate of the required thickness which is bent intermediate of its ends to provide a semi-cylindrical rib or corrugation 14 which serves to strengthen said plate and provide a housing for the inner end of a fastening bolt which will be later referred to. The fastener plate is extended laterally from each side of the rib 14 as indicated at 15, and from said latter portions of the plate the same is flanged downwardly as at 16, the edges of said flanges being bent inwardly as at 17 beneath the longitudinal edges of the chair plate 13. The opposed walls of the semi-tubular rib 14 are connected at one of their ends by a plate 22 which is provided with a central opening to receive the longitudinally extending portion of a bolt 19. The lower edge of the plate 22 engages the end of the chair plate 13. The inner end of this bolt is disposed at an angle of substantially forty-five degrees as shown at 20 and extends through an opening which is drilled through the chair plate 13, said bolt being fixed in the opening in any preferred manner. The outer end of the bolt 19 is provided with screw threads for the accommodation of a clamping nut 21. Upon the inner ends of the portions 15 of the fastener plate, the upwardly extending inclined clamping lugs 23 are formed. As clearly shown in Fig. 4 of the drawings, these clamping lugs are adapted to engage upon the base flange of the rail R, which is seated upon the chair plate 13. The lugs are moved into clamping engagement with the rail by adjusting the nut 21 upon the end of the bolt 19, thereby forcing the fastener inwardly upon the chair plate, the inwardly turned ends 17 thereof moving freely beneath the edges of the chair. By means of this construction it will be readily seen that the rails may be easily and quickly as well as securely, clamped in position upon my improved tie so that spreading of the rails will be effectually prevented. As the rail clamping plates are adapted to be stamped from a single sheet of steel, it will be obvious that the same can be produced at small cost.

My improved rail tie and fastener provides a supporting and retaining means for the rails which is extremely strong, durable and lasting in practical use.

It will of course be obvious that the vari-

ous parts employed are susceptible of considerable modification in the form and proportion without departing from the essential features or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed is:

1. In a rail fastener the combination with a tie plate and a chair plate on each end of said tie plate, fastening members longitudinally movable upon the chair plates, bolts fixed at one of their ends in the tie plate and extending above the chair plate in spaced relation thereto, and nuts threaded upon said bolts to engage said fastening members and move the same upon the chair plate into engagement with the rail.

2. In a rail fastener, the combination with the tie plate and a chair plate secured thereon and of greater width than the tie plate, a pair of rail fastening members having flanges extending beneath the longitudinal edges of the chair plate, said fastening members being provided with tongues for engagement with the base of a rail, and means for moving the fastening members longitudinally upon the chair to clamp the tongues on the rail base.

3. In a rail fastener, the combination with a tie plate and a chair plate secured thereon and of greater width than the tie plate, of a pair of fastening plates each provided with a semi-tubular strengthening rib formed centrally therein, the ends of the plates being downwardly flanged and extended inwardly beneath the longitudinal edges of the chair plate for sliding movement thereon, bolts having angular inner ends fixed in the tie plate and extending above the chair plate, said bolts being longitudinally extended upon opposite sides of the rail above the chair plate, a plate connecting the opposite walls of the semi-tubular rib at one of its ends and provided with an opening to receive one of the rods, spaced clamping lugs inclined upwardly from the inner edge of the fastening plate for engagement with the rail base, and nuts threaded upon the bolts to move the fastening plates inwardly upon the chair and engage said lugs with the rail.

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

LAFE OWEN.

Witnesses:

W. R. FOREMAN,
O. C. AUBREY.