

L. OWEN.
RAIL TIE.

APPLICATION FILED NOV. 30, 1912.

1,055,290.

Patented Mar. 4, 1913.

Fig. 1.

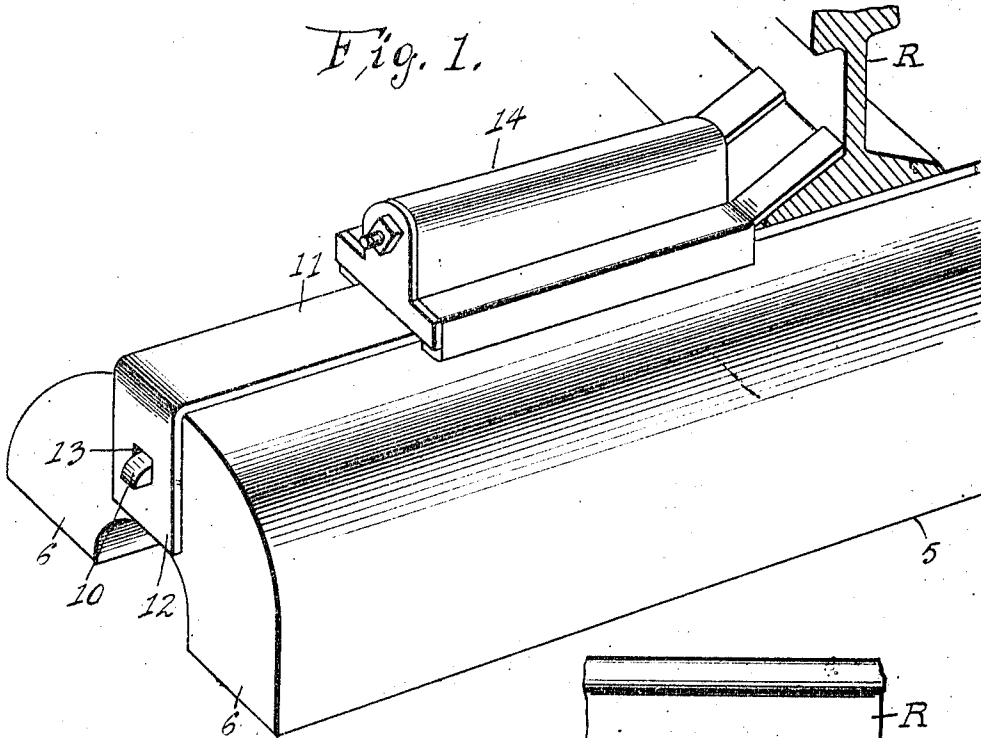


Fig. 2.

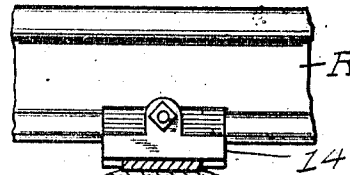
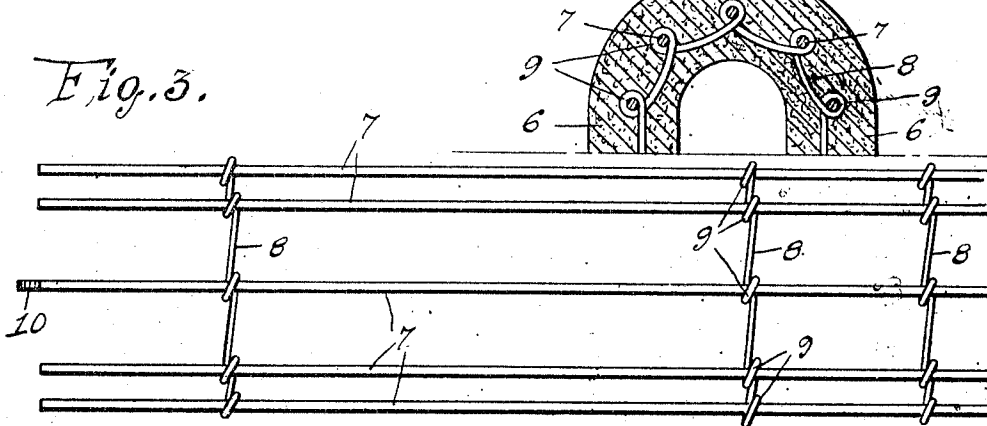


Fig. 3.



Inventor
L. Owen.

Witnesses
Robert M. Sutphen.
A. S. Hind.

By *Watson E. Coleman*
Attorney

BEST AVAILABLE COPY
UNITED STATES PATENT OFFICE.

LAFE OWEN, OF LAWTON, OKLAHOMA.

RAIL-TIE.

1,055,290.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Original application filed September 5, 1912. Serial No. 718,731. Divided and this application filed
November 30, 1912. Serial No. 734,425.

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, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in rail ties, the same constituting a division of my prior application for patent Serial Number 718,731, filed September 5, 1912, and has for its primary object to produce a durable and inexpensive rail tie constructed of plastic material and improved reinforcing or strengthening means therefor.

Another object of the invention resides in the provision of a concrete tie provided with longitudinal reinforcing rods embedded therein, one of said rods projecting beyond the ends of the tie, and a tie plate seated upon the upper surface of the tie and cooperating with the projecting ends of the reinforcing rod whereby the plate is held in position upon the tie.

Still another object of the invention is to provide a supporting tie for rails which is simple in construction, extremely strong and durable in practical use and may be easily and quickly placed in position beneath the rails.

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 fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawing in which—

Figure 1 is a perspective view of one end of a rail supporting tie embodying the present invention; Fig. 2 is a transverse section of the tie; and Fig. 3 is a top plan view of the tie reinforcement.

Referring in detail to the drawing, 5 designates the body of the tie which is constructed of concrete or other plastic material, said tie being hollow and of substantially inverted U-shaped form in cross section as clearly shown in Fig. 2. By producing the tie in the cross sectional form shown, parallel vertical supporting legs 6 are formed which are connected by an inter-

mediate arch. The rail indicated at R is seated upon the top of this arch and in order to equally distribute the load pressure throughout the cross sectional area of the tie and to prevent said tie from crumbling or breaking, I provide reinforcing means to brace or strengthen the plastic tie structure both transversely and longitudinally thereof.

The reinforcing means includes parallel longitudinal rods 7 which are embedded in the plastic material when the tie is molded or formed. Transverse connecting tie rods 8 connect the longitudinal rods 7 and hold the same in spaced relation. These tie rods are each provided with a series of spaced eyes 9, the rods 7 extending through the corresponding eyes of the several tie rods. The central longitudinal rod 7 is somewhat longer than the remaining rods so that the same projects at its ends beyond the ends of the tie as clearly shown in Fig. 1. The extremities of this longer rod are beveled or inclined downwardly and outwardly as indicated at 10 for a purpose which will be clearly pointed out in the following description.

The tie plate 11 extends longitudinally upon the upper surface of the tie and is located centrally thereon. The ends of this tie plate are angularly bent to extend downwardly over the ends of the tie as indicated at 12 and are provided with rectangular openings 13 to receive the projecting ends of the central reinforcing rod 7. In placing the tie plate in position on the tie, the extremities of said tie plate engage and bear against the beveled or inclined surfaces 10 on the ends of the rod 7 and ride over the same. When the tie plate has been forced downwardly into engagement with the upper surface of the tie, the ends of the rods 7 spring outwardly through the openings 13, thereby securely locking the tie plate in position.

In Fig. 1 of the drawings, I have illustrated a fastening means for the rail R indicated generally by the numeral 14 which is mounted upon the tie plate 11. This fastening means is specifically described and claimed in my prior application hereinbefore referred to, to which reference may be had. It is obvious, however, that any desired fastening means for the rail may be employed in combination with my improved tie structure.

It will be apparent that by providing a plastic tie with the semicircular arrangement of the longitudinal bars 7 and series of transverse connecting bars having eyes to support said longitudinal rods, a maximum of strength is secured, the vertical pressure upon the longitudinal rods being directed inwardly toward the center of the tie at its base while the transverse rods equally distribute the strain upon the homogeneous plastic tie body throughout its cross sectional area. It will at the same time be appreciated that the tie may be readily formed in a suitable mold and that its cost of manufacture will therefore be comparatively small. It will also be seen that the tie plate upon which the rail directly rests may be easily and quickly arranged in position upon the tie and securely connected thereto without necessitating the manipulation of the numerous bolts or analogous fastening devices.

From the foregoing it is thought that the construction and several advantages of my improved rail supporting tie will be clearly understood. The tie may be very quickly arranged in position beneath the rails as the same are comparatively light without, however, sacrificing the strength, durability or serviceableness of the tie structure.

While I have herein disclosed the preferred form and construction of the several elements employed, it will be obvious that the invention is susceptible of considerable modification without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed is:

1. A tie constructed from plastic material having parallel vertical legs connected by an intermediate arch, and reinforcing means embedded in the tie body comprising a series of parallel longitudinal rods, and transversely disposed tie rods each provided with a plurality of eyes in which the longitudinal rods are loosely disposed.

2. A tie constructed from plastic material having parallel vertical legs connected by an intermediate arch, and reinforcing means embedded in the tie body comprising a series of parallel longitudinal rods, and substantially semicircular tie rods conforming to the cross sectional shape of the tie and extending

tending through the vertical legs and intermediate arch thereof, each of said tie rods being provided with a plurality of eyes in which the longitudinal rods are loosely mounted.

3. The combination with a tie, of spring members projecting from opposite ends of the tie, and a tie plate mounted upon said tie and having its ends angularly bent to extend downwardly over the ends of the tie and engage said spring members, the ends of said tie plate being provided with openings to receive the spring members whereby said tie plate is held in position.

4. The combination with a tie, a rod extending longitudinally through the tie, the ends of said rod projecting beyond the ends of the tie and being resiliently movable, and a tie plate arranged upon said tie and having angularly bent ends to extend downwardly over the ends of the tie and engage the ends of said rod and force the same from their normal positions, said tie plate being provided in its ends with openings to receive the ends of the rod whereby said plate is secured in position upon the tie.

5. A tie constructed from plastic material, reinforcing means embedded in said tie, including longitudinally extending rods, one of said rods projecting beyond the ends of the tie and having downwardly and outwardly inclined faces, and a tie plate having its ends angularly bent and provided with openings, said angularly bent ends of the tie plate engaging the inclined faces of the reinforcing rods when said plate is seated in position upon the tie, the ends of said rod projecting through the openings of the tie plate to secure the rod on the tie.

6. A rail supporting tie, a rod secured in said tie and projecting beyond the ends thereof, said rod having outwardly and downwardly inclined faces, and a tie plate having angularly bent ends to engage over the ends of the tie and provided with openings to receive the ends of said rod whereby the tie plate is secured in position on the tie.

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

LAFE OWEN.

Witnesses:

H. N. POPE,

S. R. HARPER.