

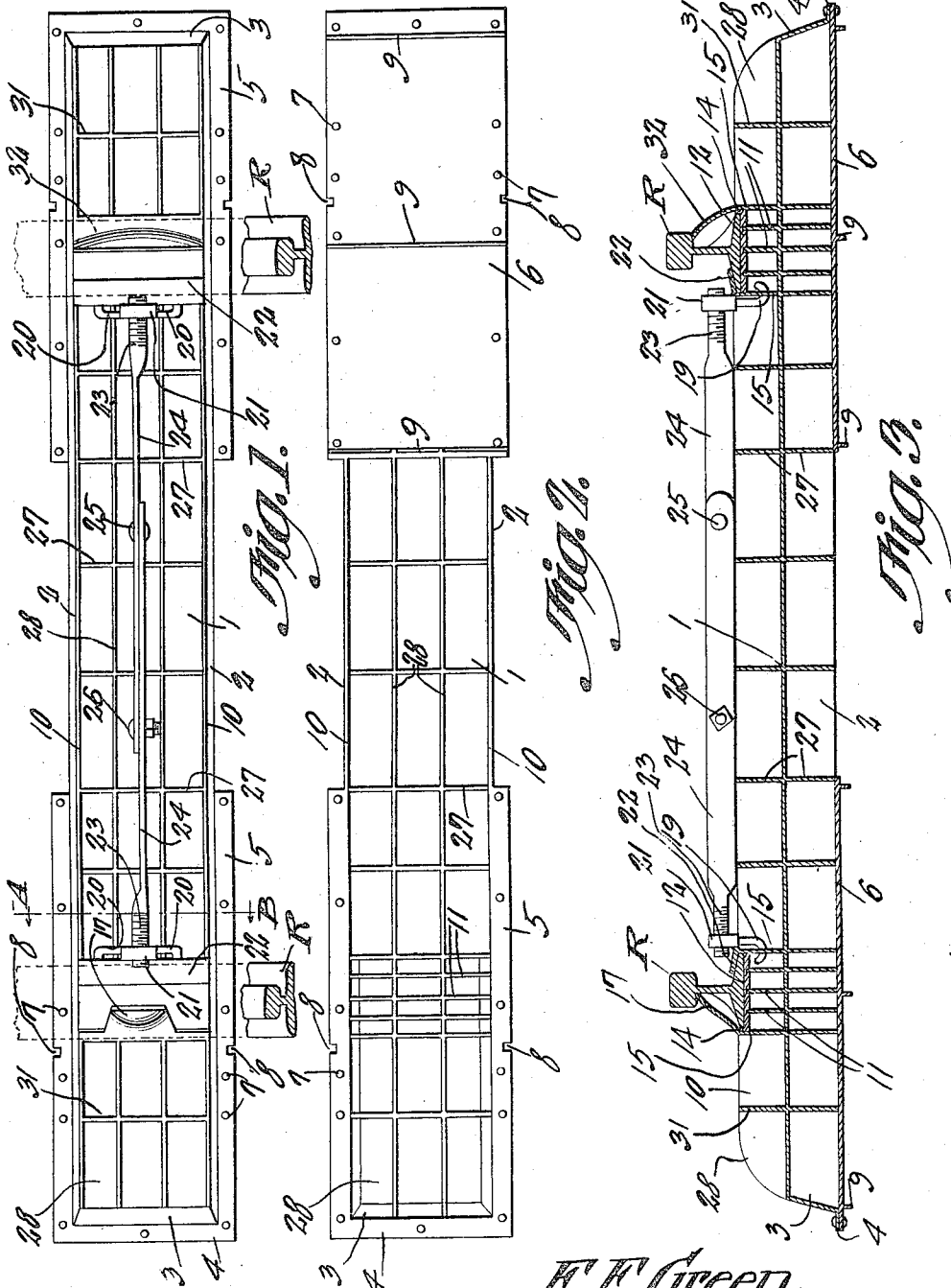
F. F. GREEN.
RAILWAY TIE.

APPLICATION FILED MAY 2, 1913.

Patented Aug. 12, 1913.

2 SHEETS—SHEET 1.

1,069,779.



Witnesses

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A. Wilcox

F. F. Green

Inventor

by

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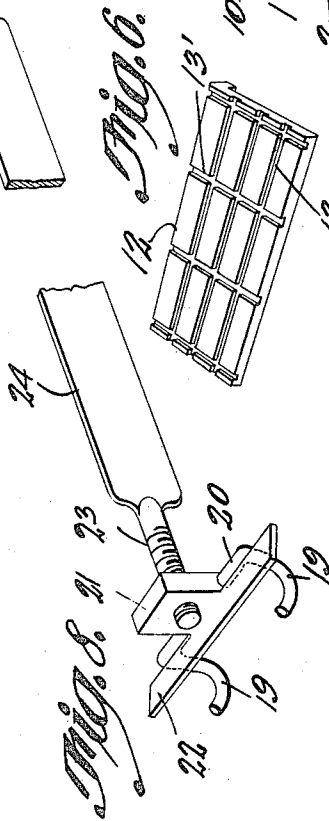
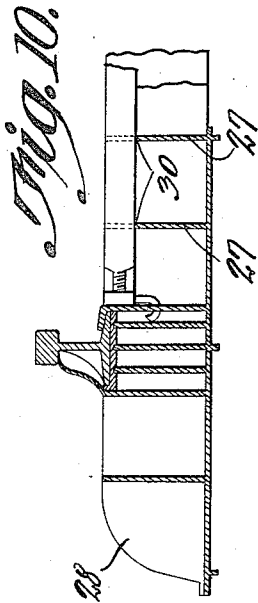
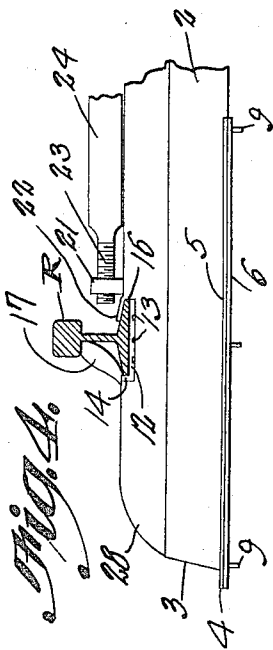
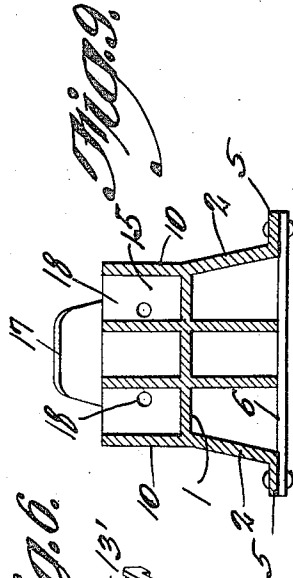
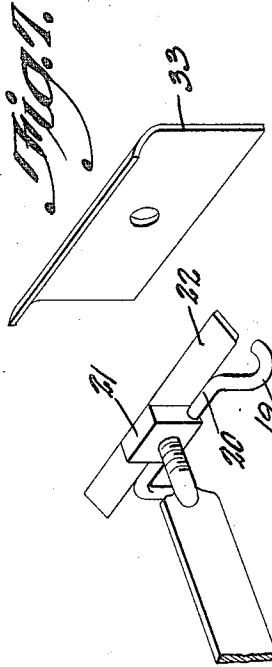
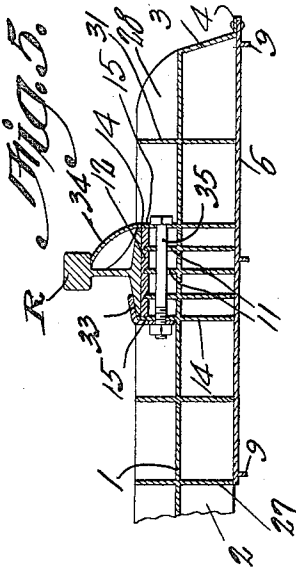
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UNITED STATES PATENT OFFICE.

FURNEY F. GREEN, OF COALGATE, OKLAHOMA.

RAILWAY-TIE.

1,069,779.

Specification of Letters Patent.

Patented Aug. 12, 1913.

Application filed May 2, 1913. Serial No. 765,161.

To all whom it may concern:

Be it known that I, FURNEY F. GREEN, a citizen of the United States, residing at Coalgate, in the county of Coal and State of Oklahoma, have invented a new and useful Railway-Tie, of which the following is a specification.

This invention relates to metallic railway ties and is more particularly designed as an improvement upon the structure disclosed in Patent 1,050,271 issued to me on January 14, 1913.

One of the objects of the invention is to provide an improved tie construction which is more durable, constitutes a more efficient support for the rails, and will be securely held against creeping.

A further object is to provide improved means for securing the rails to the tie.

A further object is to provide a wear plate of novel form for supporting the rails, said wear plate being removable and being held securely against accidental displacement relative to the tie.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a top plan view of the tie constituting the present invention, the rails thereon being indicated partly by full lines and partly by dotted lines. Fig. 2 is a bottom plan view of the tie. Fig. 3 is a vertical longitudinal section through the tie and the rails thereon. Fig. 4 is a side elevation of one end portion of the tie, the rail thereon being shown in section. Fig. 5 is a longitudinal section through one end portion of the tie and showing the means employed for fastening intermediate portions of the rails thereto. Fig. 6 is an inverted perspective view of one of the wear plates. Fig. 7 is a perspective view of one of the rail engaging jaws. Fig. 8 is a detail view of the inner rail engaging jaws and the adjustable connection therebetween, the middle portion of said connection being removed. Fig. 9 is a transverse section on

line A—B Fig. 1. Fig. 10 is a section through a portion of a modified form of tie.

Referring to the figures by characters of reference 1 designates an intermediate horizontal partition formed of metal and extending throughout the length and width of the tie. Formed in one piece with the sides of this partition are downwardly diverging supporting flanges 2, end supporting flanges 3, and supporting walls 10. Flanges 4 extend outwardly from the lower edges of the end flanges and additional flanges 5 extend outwardly from the edge portions of the flanges 2. Bottom plates 6 are adapted to be riveted or otherwise secured to the flanges 4 and 5. Apertures 7 may be provided in the edge portions of the plates 6 and within the flanges 5 for the reception of bolts or other similar fastening devices whereby the tie can be secured to bridge structures or the like. Notches 8 may also be provided in the plates 6 and flanges 5 for the reception of spikes or like fastening means.

As shown in Fig. 1, each plate 6 may be provided with ribs 9 whereby longitudinal creeping of the tie is prevented.

Walls 10 are connected directly under the rails R, by any desired number of rail supporting webs 11. In the drawings three of these webs have been shown directly under each rail but it is to be understood that if desired, a greater or lesser number of these webs can be used. The supporting webs 11 are disposed below as well as above the partition 1, the lower edges of these webs being contacted by the base plates 6. A wear plate 12 is mounted on the supporting webs 11 and has grooves 13 designed to receive the upper edges of the webs 11. Additional grooves 13' are provided and are designed to receive the upper edges of walls 10 and of longitudinal webs hereinafter referred to. Furthermore each wear plate has an upstanding flange 14 along one side and adapted to be contacted by the outer base flange of the rail supported by the tie. The wear plate 12 is interposed between two upstanding webs 15. The upper edges of the supporting webs 11 are disposed in the same plane with the bottoms of recesses 16 formed in the walls 10, these recesses being adapted to receive the ends of the wear plates 12 and also the bases of the rails R. This will be apparent by referring to Fig. 4. The recesses extend from one web 15 to the other. The outermost web 15 has an in-

tegral rail engaging flange or jaw 17 and where the jaw is to be used merely for engaging a rail at an intermediate point, it is made comparatively narrow, as shown in Fig. 1. The jaw is so shaped and proportioned as to fit snugly against the bottom of the outer side of the head of the rail, as shown in Fig. 4 so as thus to constitute a brace to prevent the rail from tilting outwardly. The outer base flange of the rail abuts against the outer web 15 as shown in Fig. 3. The inner web 15 has a pair of openings 18 designed to receive curved fingers 19 extending from the ends of arms 20. These arms extend laterally from a head 21 formed integral with a rail engaging jaw 22. Said head is engaged by a threaded stem 23 formed at one end of an elongated strip 24. Two of these strips are provided and each strip has a threaded stem engaging a head 21 to which are connected fingers 19 and the rail engaging jaw 22, as shown in Fig. 8. The two strips 24 are pivotally connected, as at 25 and both strips lap. A bolt 26 is removably mounted within the lapping strips and when this bolt is removed, the said strips can be swung relative to each other so as to draw the jaws 22 toward each other and swing the fingers 19 out of position within the openings 18.

It will be apparent that by rotating the heads 21 on the stems 23, the jaws 22 can be adjusted toward or from each other so that, when the strips 24 are straightened out or brought into substantial alinement, and the bolts 26 inserted through the two strips, the jaws 22 can be caused to press with any desired degree of pressure against the inner base flanges of the rails R. It will be apparent of course that while the jaws 22 are being placed in position, the fingers 19 will swing downwardly into the openings 18 provided therefor, these fingers thus operating to prevent the jaws 22 from lifting upwardly off of the rails. To remove the jaws 22 from the rails, it is merely necessary to remove bolt 26 whereupon the strips 24 can be swung upwardly relative to each other, thus causing the fingers 19 to swing out of the openings 18 whereupon the jaws 22 can be removed.

Connecting the walls 10 of the tie at points between the webs 15 are cross webs 27 which extend downwardly to the bottom of the tie and these cross webs may, in turn, be connected by any desired number of longitudinal webs 28 extending throughout the length of the tie. In the drawings two of these webs have been shown. Interposed between each outer web 15 and the outer end of the tie are any desired number of cross webs 31. All of these webs extend above and below the horizontal partition 1 and throughout the height of the tie.

As hereinbefore stated where the rail is to

be engaged at an intermediate point, a comparatively narrow jaw 17 is employed. If, however, the rail is to be fastened at one of its ends, a broad jaw such as illustrated at 32 is used, this jaw being of such length as to fit snugly against extensive areas on both rails supported by the tie.

Where a tie is located only under intermediate portions of rails or, in other words, when a tie does not extend under the meeting ends of rails, it is not necessary to use a fastening means such as shown in Figs. 1, 3 and 8. Instead the rails can be engaged by oppositely disposed jaws 33 and 34, the outer jaws 34 extending up to the heads of the rails so as to prevent them from tilting upwardly while both of the jaws engage the base flanges so as to hold the rails firmly upon the wear plates 12. The jaws 33 extend downwardly along the inner webs 15 and are held thereto by means of transverse bolts 35 extending through the webs 15 and the several supporting webs 11 interposed therebetween. The outer rail engaging jaw 34 is of course preferably formed integral with the outer web 15, as illustrated both in Figs. 1 and 3 and in Fig. 5. The rail engaging jaw 33 has been shown specifically in Fig. 7.

It is to be understood that the present structure is not to be limited to any particular number or arrangement of transverse and longitudinal webs, it being designed to increase or diminish the number of these webs to meet the conditions under which the tie is to be used. For example, where the tie is subjected to excessive weights, the number of webs will be increased whereas where the tie is used in connection with roads having but light traffic, the number of webs can be reduced. Furthermore the shape of the tie can be varied to meet different conditions. For example, where switches are located or where there are cross-overs, etc., the arrangement of the parts can be varied to suit the conditions to be met.

As shown particularly in Fig. 10, the horizontal partition 1 may be eliminated if desired. In fact it is designed to use this horizontal partition only when it is found that the tie will not otherwise properly support the strains to which it is subjected. In Fig. 10, also, the pivotally connected strips 24 have been shown arranged with their upper edges flush with the upper edges of the walls 10. Obviously this arrangement of the strips will necessitate the formation of notches or depressions in the upper edges of the transverse partitions 27, as indicated at 30.

By providing the wear plate 12 with transverse and longitudinal grooves for the reception of the cross and longitudinal webs in the tie, said plate is positively held against shifting either laterally or longitudinally.

Various changes other than those set forth can of course be made in the construction and arrangement of the parts without departing from the spirit of the invention.

5 What is claimed is:—

1. A metallic railway tie including side walls having rail receiving recesses, rail supporting webs connecting the walls and between the recesses, a removable wear plate bearing on the webs and extending into the recesses, said plate having grooves for the reception of the upper edge portions of the webs, and means for fastening rails upon the wear plate.
- 15 2. A metallic railway tie including side walls having rail receiving recesses, rail supporting webs connecting the walls and located adjacent the recesses, additional inner and outer webs extending across the ends of the recesses, outer rail engaging jaws extending from the outer webs, wear plates interposed between said inner and outer webs and bearing downwardly on the rail supporting webs, and means connected to the inner webs for fastening rails upon the wear plates.
- 20 3. A metallic railway tie including side walls having rail receiving recesses, rail supporting webs connecting the walls, inner and outer webs extending between the walls and across the ends of the recesses, rail bracing and engaging members extending from the outer webs, and means engaging the inner webs for fastening rails within the recesses.
- 25 4. A metallic railway tie including side walls having rail receiving recesses, rail supporting webs connecting the walls, inner and outer webs extending between the walls and across the ends of the recesses, rail bracing and engaging members extending from the outer webs, wear plates engaging the supporting webs and interposed between the outer and inner webs, said plates having upstanding flanges along their outer edges constituting abutments for the outer base flanges of the rails, and means for engaging the inner web for fastening rails upon the supporting plates.
- 30 5. A metallic railway tie including side walls having recesses for the reception of the rails, rail supporting webs connecting the walls and adjacent the recesses, wear plates mounted on the supporting webs and having grooves for the reception of the upper edges of the webs, there being an upstanding rail engaging flange along the outer edge of each wear plate, outer and

inner webs connecting the walls, said wear plates being interposed between said outer and inner webs, means extending from the outer webs for engaging the rails and bracing them, and means secured to the inner webs for engaging the inner base flanges of the rails to secure them upon the wear plates.

6. A metallic railway tie including side walls, a horizontal partition connecting the same, rail supporting webs above and below the partition, additional connecting webs between the walls, longitudinal webs interposed between certain of the connecting webs, wear plates mounted on the rail supporting webs and having grooves for the reception of the upper edges thereof, and means for securing rails upon said wear plates.

7. A metallic railway tie including side walls, a horizontal partition connecting the same, rail supporting webs above and below the partition, additional connecting webs between the walls, longitudinal webs interposed between certain of the connecting webs, wear plates mounted on the rail supporting webs and having grooves for the reception of the upper edges thereof, means for securing rails upon said wear plates, and bottom plates secured to the tie, each bottom plate including depending ribs.

8. A metallic railway tie including side walls, webs connecting the same, means upon certain of the webs for engaging the outer sides of the rails to fasten and brace the same, apertured webs connecting the walls, rail engaging jaws, heads thereon, fingers connected to the heads and slidably engaging the apertured webs, and adjustable connections between the heads.

9. A metallic railway tie including side walls, webs connecting the same, means upstanding from said webs for engaging and bracing the outer sides of the rails on said tie, apertured webs connecting the walls, rail engaging jaws, heads thereon, means extending from the heads for slidably engaging the apertured webs, lapping strips adjustably engaging the respective heads, a pivotal connection between said strips, and means for securing the strips against independent swinging movement.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

FURNEY F. GREEN.

Witnesses:

C. M. STEVENS,
E. C. SMITT.