W. R. GORRELL.

RAILWAY TIE AND RAIL FASTENING.

APPLICATION FILED OCT. 18, 1909.

948,877.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.

FIG. 1

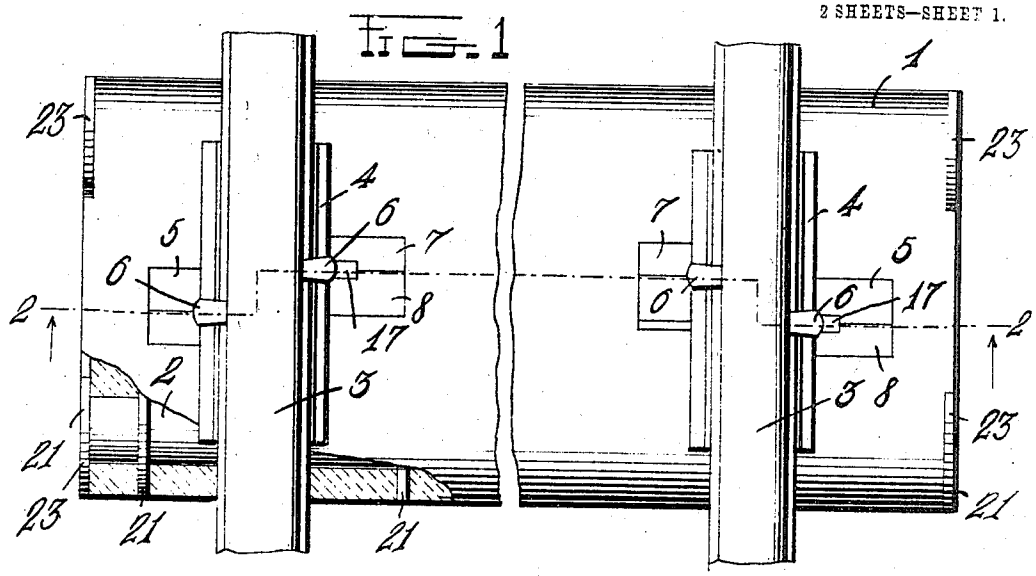


FIG. 2

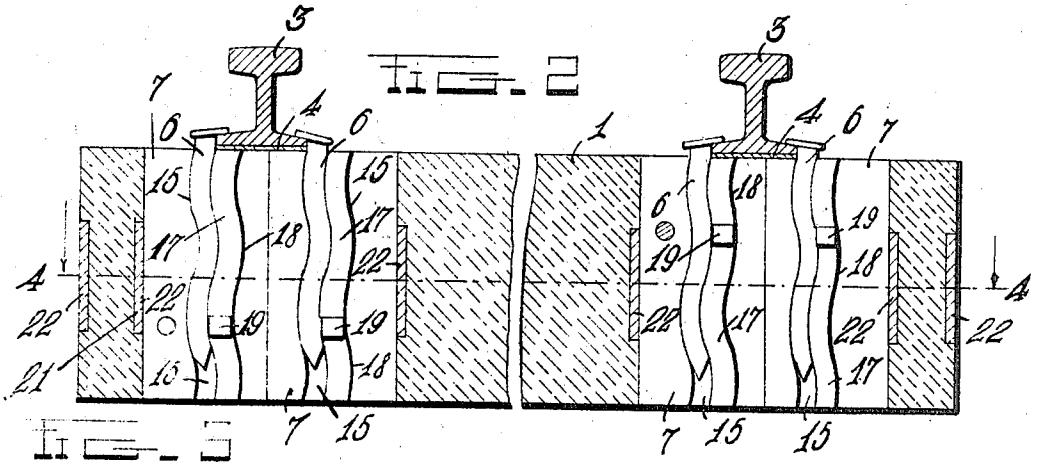


FIG. 3

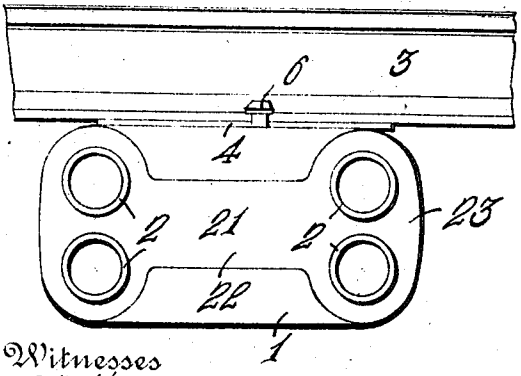
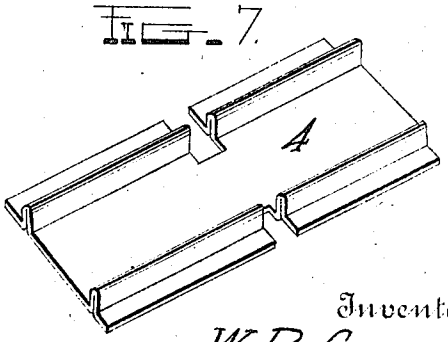


FIG. 7.



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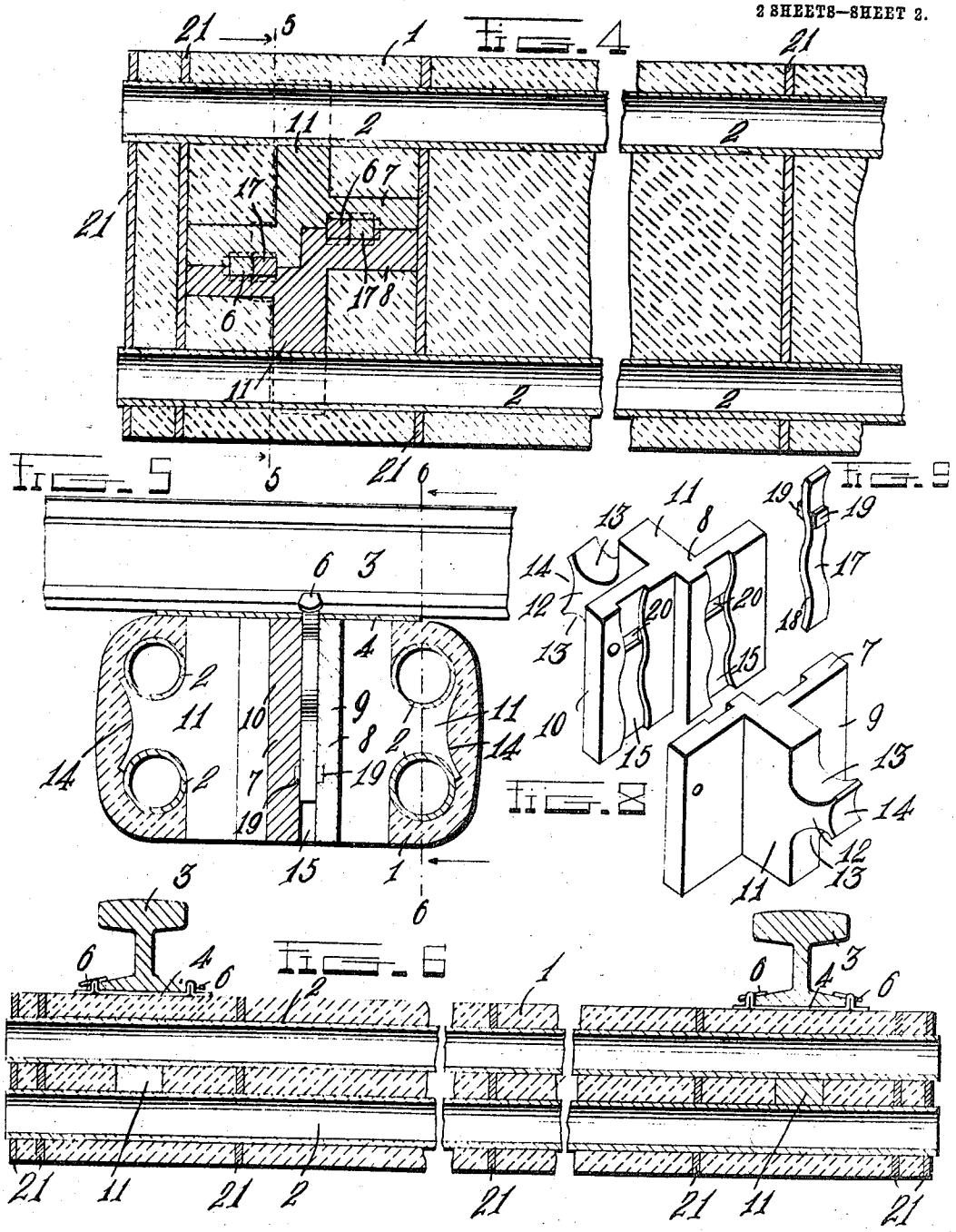

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UNITED STATES PATENT OFFICE.

WILLIAM R. GORRELL, OF HAVRE DE GRACE, MARYLAND, ASSIGNOR OF ONE-THIRD TO HUBERT G. REYNOLDS AND ONE-THIRD TO A. FREEBORN BROWN, JR., BOTH OF HAVRE DE GRACE, MARYLAND.

RAILWAY-TIE AND RAIL-FASTENING.

948,877. Specification of Letters Patent. Patented Feb. 8, 1910.

Application filed October 18, 1909. Serial No. 523,239.

To all whom it may concern:

Be it known that I, WILLIAM R. GORRELL, a citizen of the United States, residing at Havre de Grace, in the county of Harford and State of Maryland, have invented certain new and useful Improvements in Railway-Ties and Rail-Fastenings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway ties and rail fastenings.

The principal objects of the present invention are first, to provide a railway tie of reinforced concrete or other plastic material instead of wood, and second, a tie in which provision is made for adjusting the rail fastening means so that wear upon the rails may be taken up or compensated for.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a railway tie and rail fastening means embodying my improvements; Fig. 2 is a longitudinal section on line 2—2 of Fig. 1; Fig. 3 is an end elevation of Fig. 1; Fig. 4 is a horizontal section on line 4—4 of Fig. 2; Fig. 5 is a vertical transverse section on line 5—5 of Fig. 4; Fig. 6 is a longitudinal section on line 6—6 of Fig. 5; Fig. 7 is a detail perspective view of the tie plate; Fig. 8 is a detail perspective view of one of the rail fastening members showing the two sections thereof in juxtaposition; and Fig. 9 is a detail perspective view of one of the adjustable spike retaining bars.

In the embodiment illustrated, 1 indicates the tie, which is formed of concrete or other plastic material reinforced by the reinforcing tubes 2, a pair of which is arranged at each side of the tie and extend throughout the entire length thereof.

3 indicates the rails which are of the ordinary construction, 4 the tie plates in which the rails seat or fit, 5 the rail fastening members, which are arranged in the material forming the tie at opposite ends of the tie, and 6 the fastening spikes which engage the rail bases in the usual manner. Each of the rail fastening members consists of a pair of corresponding sections 7 and 8, respectively, each comprising rectangular offset portions 9 and 10. Each of said sections is also provided with a laterally extending flange 11 provided with a central tube engaging extension 12, the edges of which are recessed as at 13 to receive the reinforcing tubes and the outer ends of which are recessed as at 14 to provide for a better engagement with the concrete or other material forming the tie. The offset portions of the sections 7 and 8 are provided in their inner or meeting faces with longitudinal grooves 15, the side walls of which are corrugated. Spike retaining bars or members 17 having corrugated side edges 18 to fit the corrugated side walls of the recesses are arranged in the recessed portions of the rail fastening sections. The rail retaining bars are provided near their upper ends and at opposite faces with the offset portions or extensions 19 which fit in transverse recesses 20 formed in the inner walls of the recesses 15, the spike retaining bars being of approximately half the width of the grooves 15 and adapted to be moved to either side thereof, the reason for which will hereinafter appear.

In practice, the spikes are driven into the recessed portions of the opposed sections of the rail fastening members between the spike retaining bars and the side walls of the grooves and in so driving the spikes in position they are necessarily bent to fit the corrugations of the spike retaining bars and the side walls of the grooves, and consequently are securely locked or retained in position. When it is desired to adjust the rails inwardly to take up or compensate for any wear upon the rail heads or treads, the spikes are removed which causes them to again straighten out and the rail retaining bars move inwardly to the opposite sides of the grooves or recesses in the rail retaining members, when the spikes are again driven in position to hold the rails in their adjusted positions. A plurality of braces 21 extend transversely through the tie, two being arranged at opposite ends of each rail fastening member, one at the center and one at the extreme end of each end portion of the tie. These braces, while they may be of any suit-

able form, preferably comprise body portions 22 provided at opposite ends with the enlargements 23, which are suitably apertured to receive the reinforcing tube. When the concrete ties are used in place of wooden ties which are removed, the same spikes which were used to secure the wooden ties in position may be used in connection with the concrete tie.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

What I claim is:

1. In combination, a railway tie, reinforcing tubes extending longitudinally therethrough, braces extending transversely through the tie and having apertured enlargements at the ends to receive said tubes, and rail fastening means in the ends of the tie having portions to receive and engage said reinforcing tubes.

2. In combination, a plastic tie, rail fastening members in the ends of the tie provided with longitudinal spike receiving grooves having sinuous side walls, and adjustable spike engaging members having sinuous side edges arranged in said grooves.

3. In combination, a plastic tie, reinforcing tubes extending therethrough, rail fastening means at the end of the tie having longitudinal grooves with sinuous side walls and lateral tube engaging portions, adjustable spike engaging members having sinuous side edges to fit either of the side walls of said grooves in the rail fastening members, and spikes passing into the grooves of the rail fastening members.

4. In combination, a plastic tie and rail fastening members at the ends thereof, each of said members consisting of a pair of corresponding sections having offset portions provided in their inner faces with longitudinal spike receiving grooves having sinuous side walls, and spike engaging members of less width than that of said grooves arranged for lateral adjustment therein and having sinuous side edges to fit the walls thereof, the spike engaging members being of less width than the grooves in the rail fastening members to provide spaces between the spike engaging members and certain of the side walls of the grooves in the rail fastening members for the reception of the spikes.

5. In combination, a tie, reinforcing tubes extending therethrough, rail fastening means at the ends of the tie having longitudinal grooves with sinuous side walls, adjustable spike-engaging members having sinuous side edges to fit either of the side walls of said grooves in the rail fastening members and spikes passing into the grooves of the rail fastening members.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM R. GORRELL.

Witnesses:

WILLIAM J. FISHER,

E. I. ATKINSON.