

G. COCCIA.
RAILWAY RAIL AND TRACK CONSTRUCTION.
APPLICATION FILED FEB. 8, 1913.

1,065,779.

Patented June 24, 1913.

2 SHEETS—SHEET 1.

FIG. 1

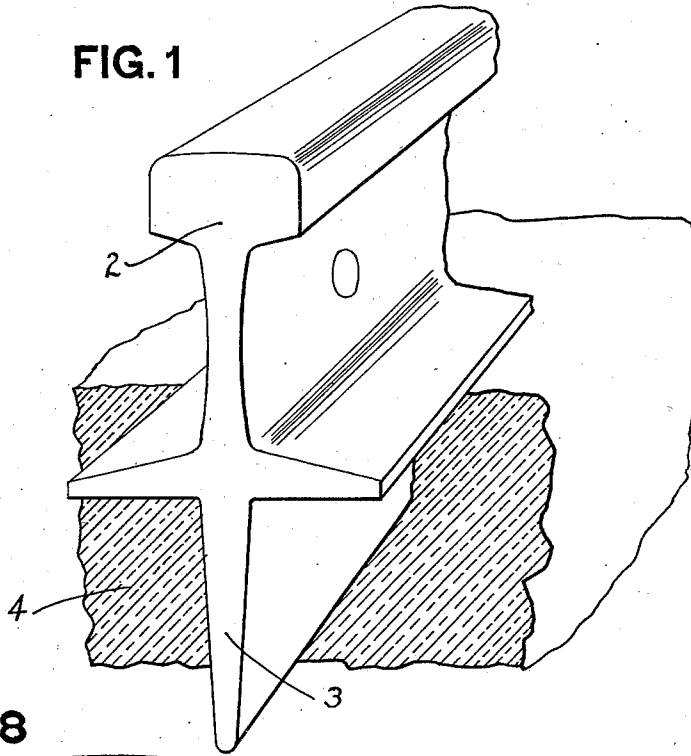


FIG. 8

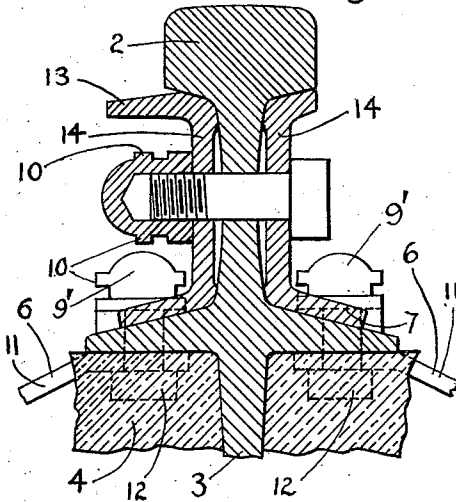


FIG. 2

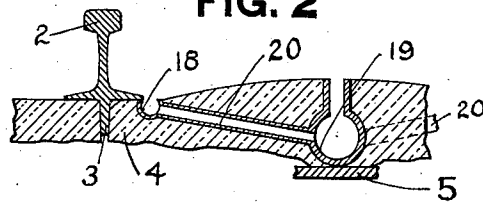


FIG. 3

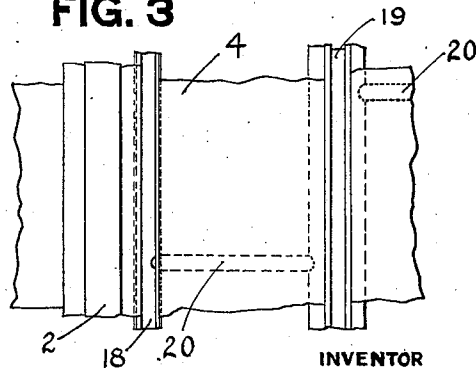
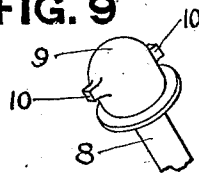


FIG. 9



WITNESSES
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C. L. Barth

INVENTOR

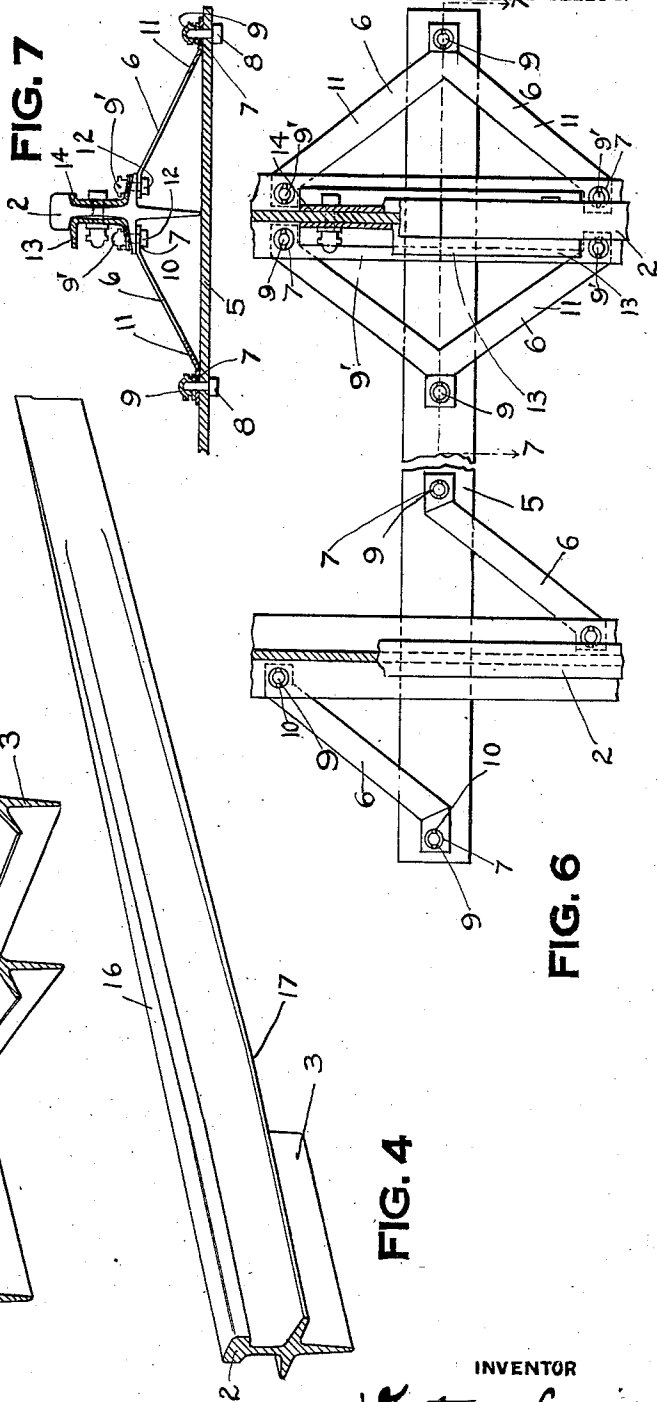
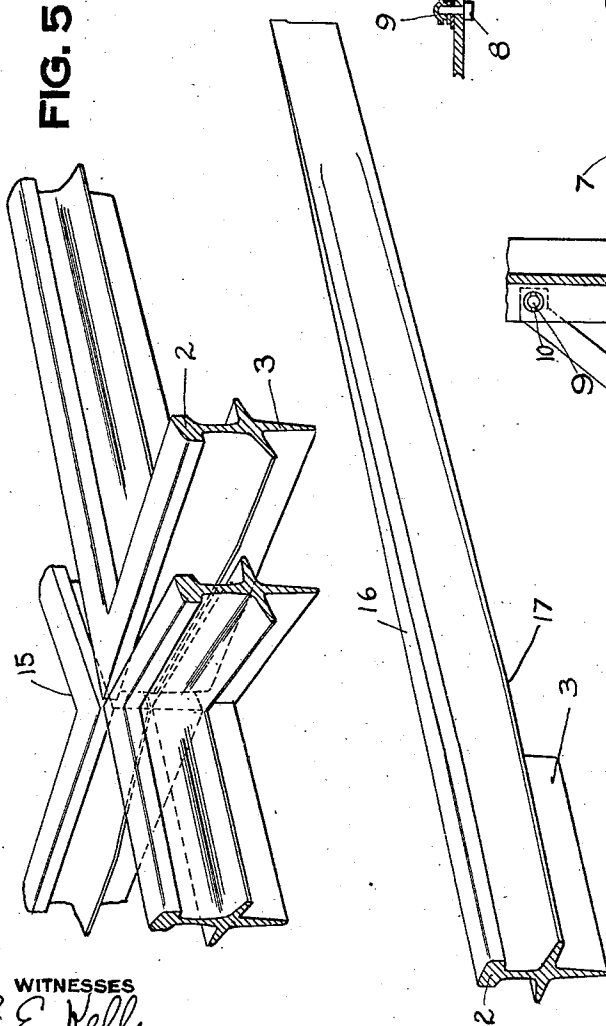
Gaetano Coccia
by M. Arthur Keller
his attorney

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2 SHEETS-SHEET 2.



WITNESSES
E. E. Keller
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UNITED STATES PATENT OFFICE.

GAETANO COCCIA, OF PITTSBURGH, PENNSYLVANIA.

RAILWAY-RAIL AND TRACK CONSTRUCTION.

1,065,779.

Specification of Letters Patent.

Patented June 24, 1913.

Application filed February 8, 1913. Serial No. 747,058.

To all whom it may concern:

Be it known that I, GAETANO COCCIA, a subject of the King of Italy, and residing at Pittsburgh, in the county of Allegheny, in the State of Pennsylvania, in the United States of America, have invented new and useful Improvements in Railway-Rails and Track Construction, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improved form of railway rail and track construction; the rail being of such character as may be readily laid in a cementitious bed, such as concrete.

I also aim to provide new and improved forms of fastening devices and braces, and a system of drainage for the rails and bed.

Other improved features of construction are provided, as will be hereinafter more fully described.

In describing my invention so that others skilled in the art to which it appertains may understand and construct the same, while I make reference to the accompanying drawings, I do not desire to limit myself thereto, as various changes may be made in the construction shown without departing from my invention.

Figure 1 is a sectional perspective fragmentary view of a railway rail and a portion of the roadbed embodying my invention; Fig. 2 is a vertical sectional view taken transversely of the roadbed; Fig. 3 is a fragmentary top plan view; Fig. 4 is a perspective view showing my invention as embodied in a switch point; the depending flange of the rail being cut away to enable preferred mounting of the switch point over the regular bearing surfaces of the switch; Fig. 5 is a fragmentary perspective view showing my invention as embodied in a frog construction; Fig. 6 is a top plan view partly in horizontal section, showing means for joining and bracing the rail construction; Fig. 7 is a vertical sectional view at the union of the rails on the line 7-7 of Fig. 6; Fig. 8 is an enlarged vertical sectional view through a rail section, being taken preferably on a line passing through the bolt openings in the splice bars and rail; and Fig. 9 is a perspective view showing an improved form of a cap-nut for the bolts used in my improved railway rail and road structure. The rail 2 may be of the usual shape in so far as concerns the general head formation

and base flange construction. However, I show the rail as being formed with a depending preferably median flange 3. In laying the rail, this flange is preferably received by the roadbed 4. It is common practice to form a railway roadbed of a cementitious body, such as concrete, and embed the ties in such body. By my invention, I dispense with the usual cross-ties and, by providing the embedding flange 3, mount the rail directly in the cementitious body.

In order to determine the gage of the track or splicing of one joint from another, I dispose, at intervals along the track the transverse tie bars 5 which carry suitable braces 6, the braces being fixed to the cross bars 5 at predetermined points, so as to enable ready gaging of the rails. As shown in Figs. 6 and 7, the braces may be placed at opposite sides of the rail below the base flange of the rail, being secured to the rail and tie bar 5 by suitable fastening means 7 12 and 9' which, in this instance, comprises a bolt 8 and suitable cap-nut 9. The cap-nut construction may prevail in all the fastenings, the idea being to protect the threads against corrosion, and as shown in Fig. 9, such nut may have suitable lateral lugs 10 by means of which it may be easily applied to and removed from its bolt.

The construction of the braces 6 at the point within the vicinity of the joint between the opposing ends of the rails is clearly shown in Fig. 6. In this case, the brace 6 is preferably bifurcated or spread to form independent bracing arms 11, which pass to each end of the joint, and are secured by the usual fastening bolts 12. The nuts and bolts may, in turn, be protected from water by an overhanging head or flange portion 13 of the splice bars 14 of the joint.

In Fig. 5, I show my invention as applied to the formation of a frog 15, the depending flange 3 serving to greatly stiffen the frog against stresses.

In Fig. 4, I show my invention as applied to a switch point 16; the flange 3 being cut away as at 17 to provide the usual flat under-bearing face for the point in its lateral operative shifting in the making of switch adjustment.

Referring to Figs. 2 and 3, 18 indicates a trough or gutter for carrying surface water, etc., from the rails. At 19 is indicated a central fluid conducting member which is com-

monly associated by means of conduits 20 with the side troughs or drains 18; this center conduit preferably being placed below the upper level of the roadbed. In some cases, this conduit may form the retaining shell or housing for an electric conductor.

The roadbed 4 is preferably of such height as affords a bearing contact for the regular horizontal base flanges of the rail. The rails may first be laid and the cross-braces placed in position, after which the plastic or cementitious body of the roadbed may be applied, being drifted in or under the rail at each side of the depending flange 3. When this concrete or similar material is thoroughly set or hardened, it presents to the under side of the rail, a perfect bearing surface, which supports the rail under all operative stresses. Furthermore, the depending flange positively prevents any tendency to lateral displacement or spreading of the rails.

It will be apparent that many changes may be made in the construction form. Instead of providing a roadbed formed wholly of a cementitious substance, a brick roadbed may be formed; the depending flange occupying a suitable recess in such bed.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In railway track construction, the combination of rails having the usual base flanges, a depending flange portion extending longitudinally of each rail, means for joining the end of one rail to another, a tie bar extending beneath the depending flanges and transversely of the rails, and brace arms secured to the tie bar and extending angularly upwardly into engagement with the base flanges of the rails.

2. In railway track construction, the combination of rails having the usual base flanges, a depending flange portion extending longitudinally of each rail, means for

joining the end of one rail to another, a tie bar extending beneath the depending flanges and transversely of the rails, brace arms secured to the tie bar and extending into engagement with the underside of the base flanges of the rails, and means for securing said brace arms to the base flanges.

3. In railway track construction, the combination of rails having the usual base flanges, a depending flange portion extending longitudinally of each rail, means for joining the end of one rail to another, a tie bar extending beneath the depending flange and transversely of the rails, and means for securing the rails to the tie bar and comprising brace arms extending into engagement with the base flanges of the rails; one of said brace arms engaging both of the contiguous rail ends.

4. In railway track construction, the combination of a plurality of rails having the usual base flanges, a depending flange portion extending longitudinally of each rail, means for joining the end of one rail to another, a tie member across the rails, and means connecting the base flanges of the rails to the tie member and engaging both of the contiguous rail ends.

5. In railway track construction, the combination with a plastic road bed, of a plurality of rails having the usual base flanges, a depending flange portion extending longitudinally of each rail, means for joining the end of one rail to another, a tie member extending across the road bed, and means connecting the base flanges of the rail to the tie member and engaging both of the contiguous rail ends.

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

GAETANO COCCIA.

Witnesses:

E. E. KELLER,
ADELE REILLY.