

No. 753,803.

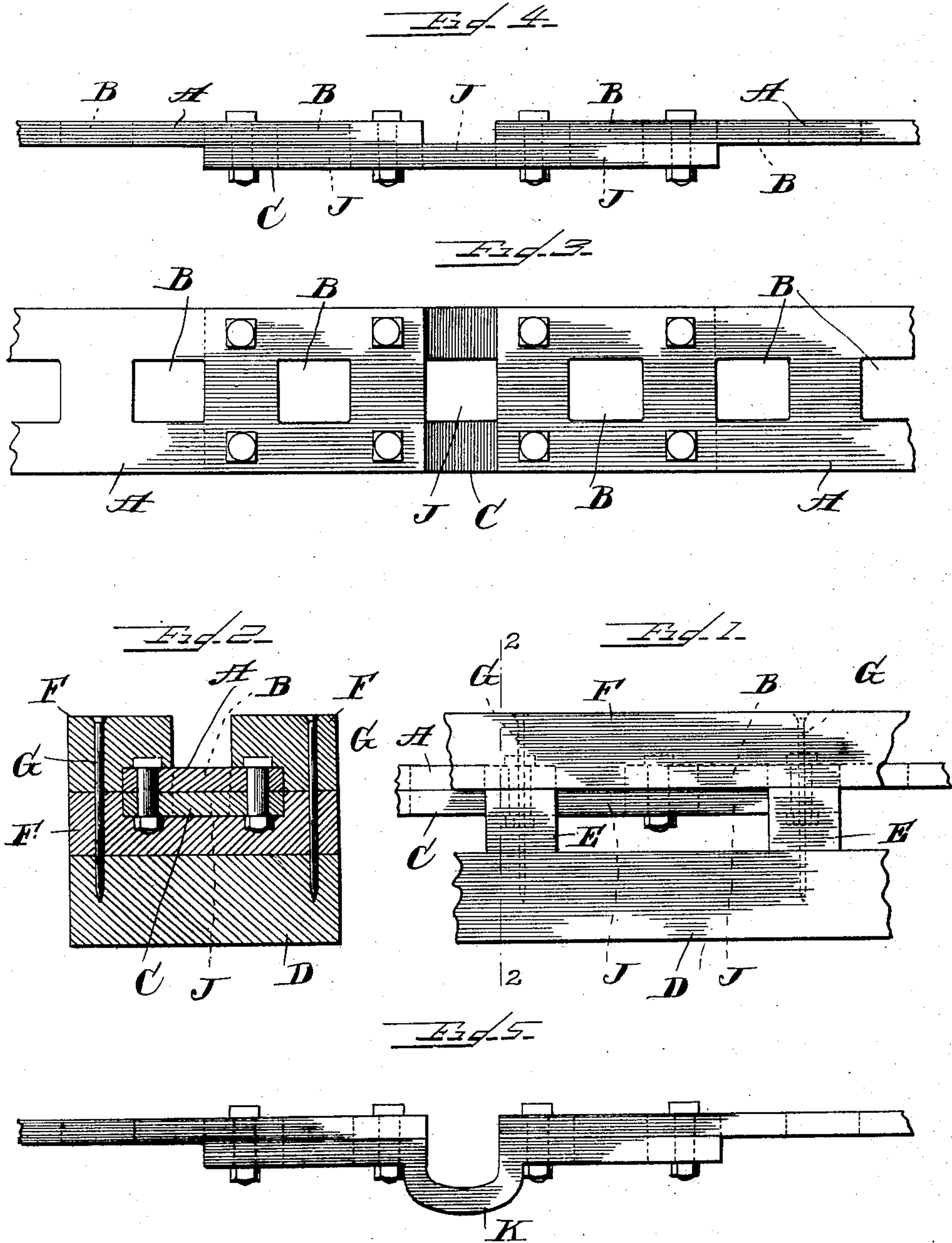
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E. C. MORGAN.

COMBINED THIRD AND TRACTION RAIL FOR ELECTRIC RAILWAYS.

APPLICATION FILED DEC. 3, 1903.

NO MODEL.



WITNESSES.

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UNITED STATES PATENT OFFICE.

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COMBINED THIRD AND TRACTION RAIL FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 753,803, dated March 1, 1904.

Original application filed August 27, 1902, Serial No. 121,193. Divided and this application filed December 3, 1903. Serial No. 183,581. (No model.)

To all whom it may concern:

Be it known that I, EDMUND C. MORGAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Combined Third and Traction Rail for Electric Railways, of which the following is a specification.

This invention relates to combined third and traction rails for electric railways, this application being a division of my pending application, Serial No. 121,193, filed August 27, 1902.

The object of the invention is to simplify and improve the construction of devices of this nature and to render the same more efficient in operation.

A further object of the invention is to provide means whereby in a combined third and traction rail for electric railways the third rail serves not only as a conductor for supplying current to the motor on the truck, but also is constructed and arranged to be engaged by gearing carried by the truck and operated by the motor thereon for causing the truck to move along the track.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a broken detail view in side elevation of the third or traction rail construction embodying the principles of my invention. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1. Fig. 3 is a broken detail view in top plan of a combined third and traction rail embodying the principles of my invention. Fig. 4 is a view in side elevation of the construction

shown in Fig. 3. Fig. 5 is a view similar to Fig. 4, showing a slightly-modified arrangement embraced within the spirit and scope of my invention.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In carrying out my invention I employ thick metal sheets, plates, or bars A, having holes or openings B therethrough and suitably spaced apart throughout the length of the bars or plates A to form a rack to receive the teeth or cogs of a suitable drive-wheel mounted upon the truck and driven in any suitable manner, whereby the truck is advanced along the road-bed. The plates or bars A are arranged end to end throughout the length of the road-bed or track-rails and at their ends are joined together by means of fish-plates C, suitably lapped across the joint between adjacent bars or plates A and securely bolted or otherwise secured to each plate, as clearly shown. In practice and as shown the fish-plates are of a length corresponding to the length of the plates or bars A, containing three of the holes or openings B, and in practice approximate ends of adjacent plates or bars A across which the fish-plates are applied are spaced apart a distance corresponding to the space occupied by one of the holes or openings B, and I provide the fish-plate with holes or openings (indicated by dotted lines at J) at each end and also in the center thereof and respectively coinciding with the terminal hole or opening B in each end of the adjacent plates or bars A and with the space between the proximate ends of said plates or bars. Instead, however, of providing a central hole or opening J in the fish-plate said fish-plate may be bowed or bent, as indicated at K, Fig. 5, at a point opposite the gap or opening between the proximate ends of adjacent plates or bars. The object and purpose of this bend or corrugation in the fish-plate is to permit of any slight expansion and contraction due to variations in

temperature to which the combined third and traction rail may be subjected in use, the holes or openings J in the ends of the fish-plate, however, in this instance being made to register with the end holes or openings in the adjacent ends of the plates or bars A, which are secured together by such fish-plate.

The combined third and traction rail may be supported in any suitable or convenient manner. I have shown a simple and efficient arrangement wherein supporting-sills D are arranged to extend lengthwise of the track-rails and in any convenient relative arrangement with respect to the track-rails, preferably between said track-rails. These sills D may be supported or may rest upon the ordinary track-ties upon which the track-rails are supported. At suitable intervals apart I support upon the sills D transverse blocks or pieces E, upon which the combined third and traction rail plates or bars A rest.

F designates stringers extending longitudinally with respect to the combined third and traction rail and respectively arranged on opposite sides of the latter, said stringers resting upon and being supported by the transverse blocks or pieces E. If desired, and preferably, the stringers F are rabbeted on their opposed or inner faces to receive the edges of the combined third and traction rail plates or bars A. The stringers F may be secured by means of bolts, spikes, or the like (indicated at G) arranged to pass transversely therethrough, through the cross-pieces E, and into the sills D, as clearly shown. In this manner the side pieces or stringers F serve as keepers to retain the combined third and traction rail plates or bars A in suitable and proper alinement.

The holes or openings B may be formed in the plates or bars A and in the fish-plates in any convenient manner—as, for instance, by punching the same out.

From the foregoing description it will be seen that I provide an exceedingly simple and efficient combined third and traction rail which is strong and durable and economical in manufacture.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In an apparatus of the class described, a combined third and traction rail comprising plates or bars arranged end to end and having suitably-spaced openings therethrough, in combination with plates lapped over the joint at the abutting ends of said plates or bars and secured thereto, as and for the purpose set forth.

2. In an apparatus of the class described, a combined third and traction rail comprising

plates or bars arranged end to end and having suitably-spaced openings therethrough, the proximate ends of adjacent plates or bars being separated a distance corresponding to the openings formed through said plates or bars, in combination with plates lapped over the joint at the separated ends of said plates or bars and secured thereto, as and for the purpose set forth.

3. In an apparatus of the class described, a combined third and traction rail comprising plates or bars arranged end to end and having suitably-spaced openings therethrough, in combination with plates lapped over the joint at the adjacent ends of said plates or bars and secured thereto, said lapping plates having openings therethrough registering with the terminal openings adjacent to the ends of said first-mentioned plates or bars, as and for the purpose set forth.

4. In an apparatus of the class described, a combined third and traction rail comprising plates or bars arranged end to end and having suitably-spaced openings therethrough, in combination with plates lapped over the joint at the adjacent ends of said plates or bars and secured thereto, said lapping plates having a bent portion adjacent the joint between the abutting ends of said first-mentioned plates or bars, as and for the purpose set forth.

5. In an apparatus of the class described, a combined third and traction rail comprising plates or bars arranged end to end and having suitably-spaced openings therethrough, the proximate ends of adjacent plates or bars being spaced apart a distance corresponding to the area of one of said openings, in combination with fish-plates lapped over the joint at the abutting ends of said plates or bars and secured thereto, said fish-plates provided with a bend at a point adjacent the space between the proximate ends of adjacent plates or bars, as and for the purpose set forth.

6. In an apparatus of the class described, a combined third and traction rail comprising plates having suitably-spaced openings therethrough and arranged end to end, supporting-sills arranged in longitudinal relation with respect to said rails, cross-pieces or blocks mounted upon said sills, said rail resting upon said cross-pieces or blocks, and stringers resting upon said cross-pieces or blocks and receiving said rail therebetween, said stringers forming keepers for said rail, as and for the purpose set forth.

7. In an apparatus of the class described, a combined third and traction rail, a supporting-sill therefor arranged in longitudinal relation with respect thereto, transverse blocks or pieces mounted upon said sill, and upon which said rail rests, stringers arranged in longitudinal relation with respect to said rail and spaced a suitable distance apart to receive the

rail therebetween, said stringers being rabbeted upon their meeting faces to receive the edges of said rail, said stringers resting upon said cross-pieces or blocks, and means for securing said stringers, cross-pieces and sill together, as and for the purpose set forth.

In witness whereof I have hereunto set my

hand, this 1st day of December, 1903, in the presence of the subscribing witnesses.

EDMUND C. MORGAN.

Witnesses:

E. C. SEMPLE,
S. E. DARBY.