

No. 755,327.

PATENTED MAR. 22, 1904.

L. STEINBERGER.
TRACK STRUCTURE.

APPLICATION FILED NOV. 9, 1903.

NO MODEL.

Fig. 1.

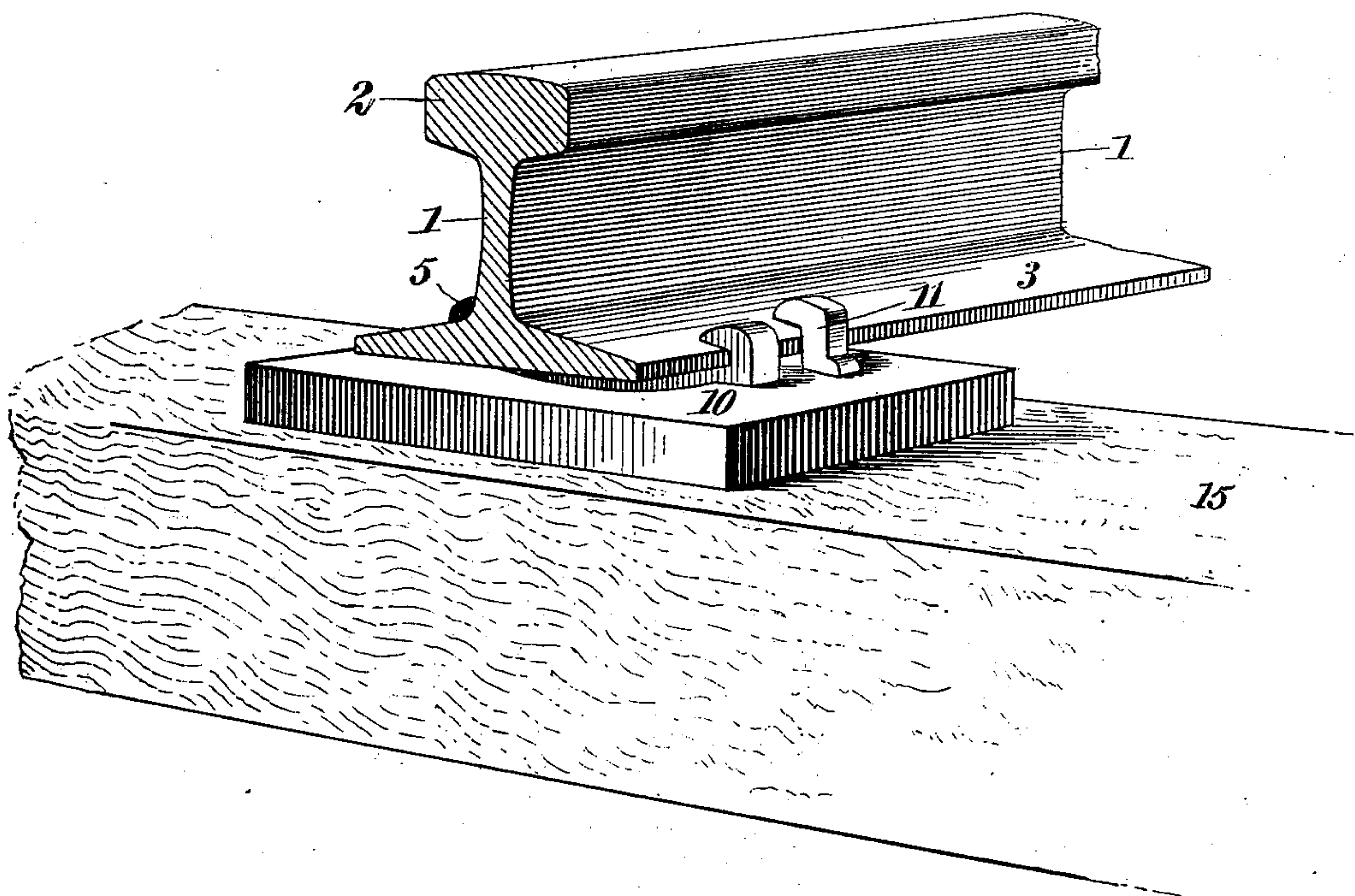
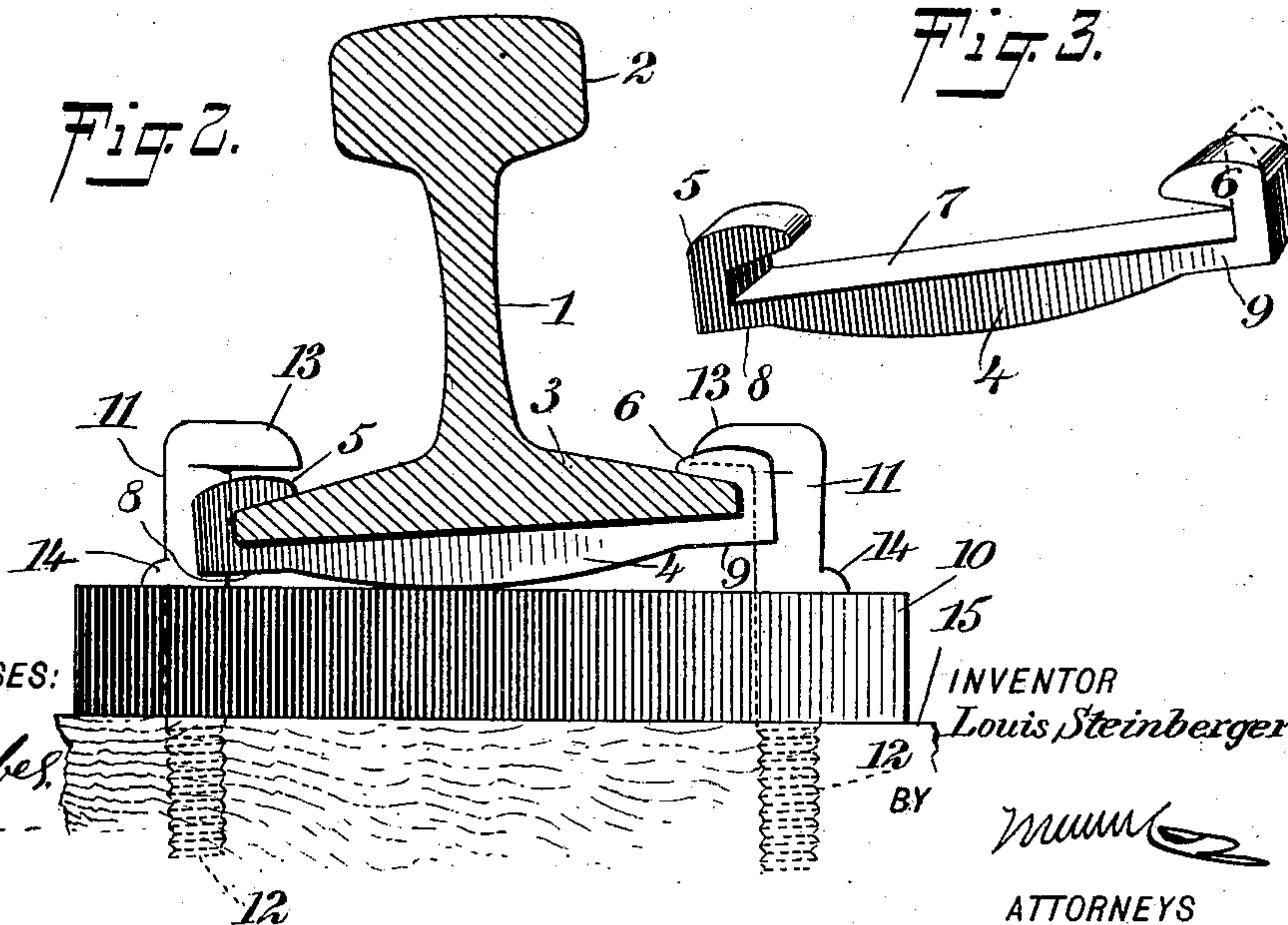


Fig. 2.

Fig. 3.



WITNESSES:

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TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 755,327, dated March 22, 1904.

Application filed November 9, 1903. Serial No. 180,369. (No model.)

To all whom it may concern:

Be it known that I, LOUIS STEINBERGER, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Track Structure, of which the following is a full, clear, and exact description.

My invention relates to track structures and admits to some extent of general use, but is particularly adapted for use for distributing electric current in the capacity of a so-called "third rail" as used upon electric railways and in analogous relations.

My more special object is to produce a rocker to be applied upon a rail-section, so as to allow the rail-section to rock in a lateral direction and to reduce to a minimum the bearing-surface upon which the rail rests, lessening the friction of the rail on its supports, and in consequence providing a means for the easy movement of the rail both longitudinally and transversely during expansion and contraction of the rails.

By the use of this invention the chances for breaking or bending of the insulated rail-supports are practically obviated, and owing to the mobility of the rail a much better contact is effected by the collector-shoe than is obtained from a rigid rail, thereby attaining certain advantages well known in the art.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary perspective view of a rail as used in connection with my improved rocker and support. Fig. 2 is an enlarged end elevation of the same, and Fig. 3 is a perspective view of the rocker disconnected from the rail-section.

The rail-section consists of a web 1, a tread 2, and flanges 3, these parts being integral and the flanges, together with the web, constituting a base whereby the tread 2 is supported. The rocker is shown at 4 and is provided with upturned flanges 5 6 and with an upper flat portion 7. The rocker is likewise provided with shoulders or flat portions 8 9, as indicated in Fig. 3. A plate of insulating

material 10 may be used for engaging the rounded surface of the rocker, as indicated in Figs. 1 and 2. Fastening members 11, each preferably provided with a screw portion 12 and with lugs 13 and shoulders 14, are rigidly connected with cross-ties 15 and are partially threaded through the plate 10 of insulating material. These fastening members are preferably screwed rigidly in position, as indicated in Fig. 2, the lugs 13 thus overlapping the flanges 3 of the rail-section. The lugs 13 and shoulders 14 are preferably so disposed that when the fastening members 11 are fully driven into position, as indicated in Fig. 2, one of the surfaces 8 9 comes into contact with the plate or block 10 of insulating material at the same instant when the opposite flange 3 rises into engagement with the lug 13 immediately adjacent thereto.

It is not deemed necessary to explain at length the many advantages to be attained by a rocking rail, especially as applied to the distribution of electric currents in the propulsion of an electrically-operated vehicle, as these advantages are well known in the art. Among the special advantages to be attained, however, by the use of my present invention may be enumerated the following: first, rail-sections of ordinary construction may be employed by applying my improved rocker thereto; second, the rocker may be renewed when worn out, the same rail being used to wear out several different sets of rockers; third, any defect found in a rocker need not cause an entire rail-section to be thrown out, as the defect in the rocker may be replaced by a perfect one; fourth, comparatively little expense attends the conversion of rail-sections of any ordinary type into a type which may be employed in connection with my invention; fifth, the amount of longitudinal play given the rail may be governed by properly positioning the rocker and the fastening members relatively to each other; sixth, by increasing the mobility of the rail the collector-shoe is enabled to make a much better contact with its tread and the loss of power incidental to the mechanical movement of the rail is greatly lessened.

As will be seen in Fig. 1, the rocker is se-

cured upon the under side of the rail, the rotund portion 4 being brought into engagement with a support consisting, preferably, of a block of insulating material 10, as shown.

5 If now the rail-section be careened either to the right or to the left the rotund portion 4 merely rocks upon the block 10, the point of contact being shifted to the right or to the left, according to the direction of motion.
10 For instance, in Fig. 2, where the rail is careened toward the left, the point of support between the rotund surface 4 and the block 10 is slightly to the left of the central line of the rail-section, whereas if the rail-section be
15 careened to the right of this central line the point of contact is shifted to the right. This prevents the under side of the rocker from becoming rusty or roughened to any extent and always insures a true rolling motion as
20 between the rocker and its support. Of course any amount of longitudinal motion can be allowed for the rail-section, this being a mere matter of adjustment, as will be seen from Fig. 1.

25 The entire rocker is shown in Fig. 3. This rocker is made of any suitable material, preferably metal, the flanges 5 6 being malleable. If desired, the central portion of the rocker may be hardened or toughened. Indeed, the
30 rocker may be tempered after it is placed upon the rail, if desired. The rocker, as shown in this figure, consists of an integral strap which passes transversely across the bottom of the rail, the malleable lugs or flanges 5 6
35 being then bent down, as indicated in Fig. 2, so that the rocker is rigidly secured to the base of the rail, or the rocker member may be formed into the required shape and slipped
40 thereof and moved along until it is above the respective rail-supports.

As shown in Fig. 2, the rail-section is substantially T-shaped—that is, it has the cross-section usually employed—and the rocker simply supports the rail-section in stable equilibrium, so that the rail-section can be careened within certain limits, as above explained; and is self-restoring.

I do not limit myself to the particular form
50 of rocking rail herein shown nor to the form of rocker to be affixed thereto; neither do I limit myself to the particular form of mechanism shown for connecting the rail to a support, as these details may be varied without
55 departing from the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A track structure, comprising a rail-section and a separate rocker connected therewith for supporting the same.

2. A track structure, comprising a rail-section provided with a flat bottom, and a rocker provided with a flat portion for engaging said bottom and with a rotund portion for engaging a support.

3. A track structure, comprising a rail-section having a cross-section of substantially T shape, and a rocker connected with the bottom of said rail and provided with a rotund surface for engaging a support.

4. A track structure, comprising a rail-section provided at its bottom with base-flanges, and a rocker engaging said bottom and provided with members for overlapping said base-flanges.

5. A track structure, comprising a rail-section and a separate rocking member connected therewith for engaging a supporting-surface and thereby sustaining said rail-section in stable equilibrium.

6. A track structure, comprising a rail-section having base-flanges and a rocker connected with said rail-section, said rocker being provided with malleable portions bent into engagement with said flanges.

7. A track structure, comprising a rail-section of ordinary construction, and members rigidly connected therewith for engaging a support, thereby sustaining said rail-section in stable equilibrium.

8. A track structure, comprising a rail-section, and a rocker rigidly connected therewith for engaging a rigid supporting-surface, thereby sustaining said rail-section in stable equilibrium.

9. A track structure, comprising a rail-section, and a member rigidly connected therewith, said member being provided with a rotund portion for engaging a support and with malleable flanges for gripping said rail-section.

10. A track structure, comprising a rail-section, and a rocker provided with malleable flanges for gripping the same.

11. A track structure, comprising a rail-section provided with a base portion having flanges, and a rocker engaging said base portion and provided with members engaging said flanges.

12. A track structure, comprising a rail-section, and a rocker having substantially the form of a strap and extending transversely across said rail-section.

13. A track structure, comprising a rail-section, and a rocker having substantially the form of a strap and extending transversely across said rail-section, said strap being provided with malleable flanges integral therewith for engaging said rail-section.

14. A track structure, comprising a rail-section, and a member having substantially the form of a strap, said member extending transversely across said rail-section and being relatively thick at its middle portion and provided with means whereby said strap may be secured upon said rail-section.

15. A track structure, comprising a rail-section, and a rocker connected rigidly thereto, said rocker being provided with a portion for permanently engaging a support, thereby sus-

taining said rail-section in stable equilibrium, said rocker being further provided with portions for intermittently engaging a fixed surface for the purpose of limiting the rocking movement of said rail-section.

16. A track structure, comprising a rail-section and a metallic member provided with a portion for engaging a support, thereby sustaining said rail-section in stable equilibrium, said metallic member being further provided with comparatively thin portions for engaging a fixed surface and thereby limiting the movement of said rail-section.

17. As an article of manufacture, a metallic rocker provided with a rotund portion and with malleable flanges for securing said member to a rail-section.

18. As an article of manufacture, a metallic rocker having the form of a strap thick at its middle portion and comparatively thin at its ends, said ends terminating in malleable flanges for engaging the flanges of a rail.

19. As an article of manufacture, a metallic rocker having a convex portion for engaging a support, a flat portion for engaging the bottom of a rail-section, and malleable flanges for gripping the flanges of said rail-section.

20. As an article of manufacture, a metallic rocker having a rotund portion for permanently engaging a support, a flat portion for engaging the bottom face of a rail, and anvil-surfaces for intermittently engaging a fixed surface, thereby limiting the movements of said rocker.

21. A track structure, comprising a block of insulating material to be mounted upon a cross-tie, a rocker mounted upon said block, and a rail-section connected with said rocker.

22. A track structure, comprising a support of insulating material, a rocker mounted thereon and free to move relatively thereto, a rail-section rigidly connected with said rocker, and limiting-stops for preventing excessive movements of said rail-section.

23. A track structure, comprising a block of insulating material, means for supporting the same, a rail provided with a rocker extending transversely across the same and beyond the edges thereof, and limiting-stops disposed in close proximity to said rail-section but out of contact with said rocker.

24. A track structure, comprising a block of insulating material mounted upon a cross-tie, fastening members engaging said block of insulating material and said cross-tie, said fastening members being provided with lugs, a rocker loosely engaging said block of insulating material and free to move relatively

thereto, and a rail-section connected rigidly with said rocker and movable therewith, said rail-section being adapted to engage said lugs which form limiting-stops therefor.

25. A track structure, comprising a support of insulating material, a rail-section provided with a rocker engaging the same, said rail being thus free to rock, and limiting-stops for engaging portions of said rail-section, thereby preventing excessive movements of the same.

26. A track structure, comprising a rail-section, a member connected therewith and engaging a support, said member being provided with means for sustaining said rail-section in stable equilibrium.

27. As an article of manufacture, a detachable rocker member provided with means for securing said member to a rail-section.

28. A track structure, comprising a rigid support of insulating material, a rail-section provided with a detachable rocker engaging the same, said rail-section being free to rock on said rigid support.

29. A track structure, comprising a rail-section and a member connected thereto, said member being of arbitrary conformity for engaging a support and thereby sustaining the rail in stable equilibrium.

30. A track structure, comprising a body portion, and a separate rocking member connected therewith for loosely engaging a support, and thereby sustaining said body portion in stable equilibrium.

31. A track structure, comprising a body portion, and a separate member connected therewith and provided with a supporting-face for sustaining said body portion approximately upon a single central line.

32. A track structure, comprising a body portion, and a separate member connected therewith, said member being provided with a portion for engaging a support so as to sustain said rail upon a single central line.

33. As an article of manufacture, a rocker for rails provided with means for connecting the same with a rail-section.

34. As an article of manufacture, a rocker for rails provided with means for engaging a rail-section, and with a surface for engaging a support.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS STEINBERGER.

Witnesses:

WALTON HARRISON,
E. C. NIELSON.