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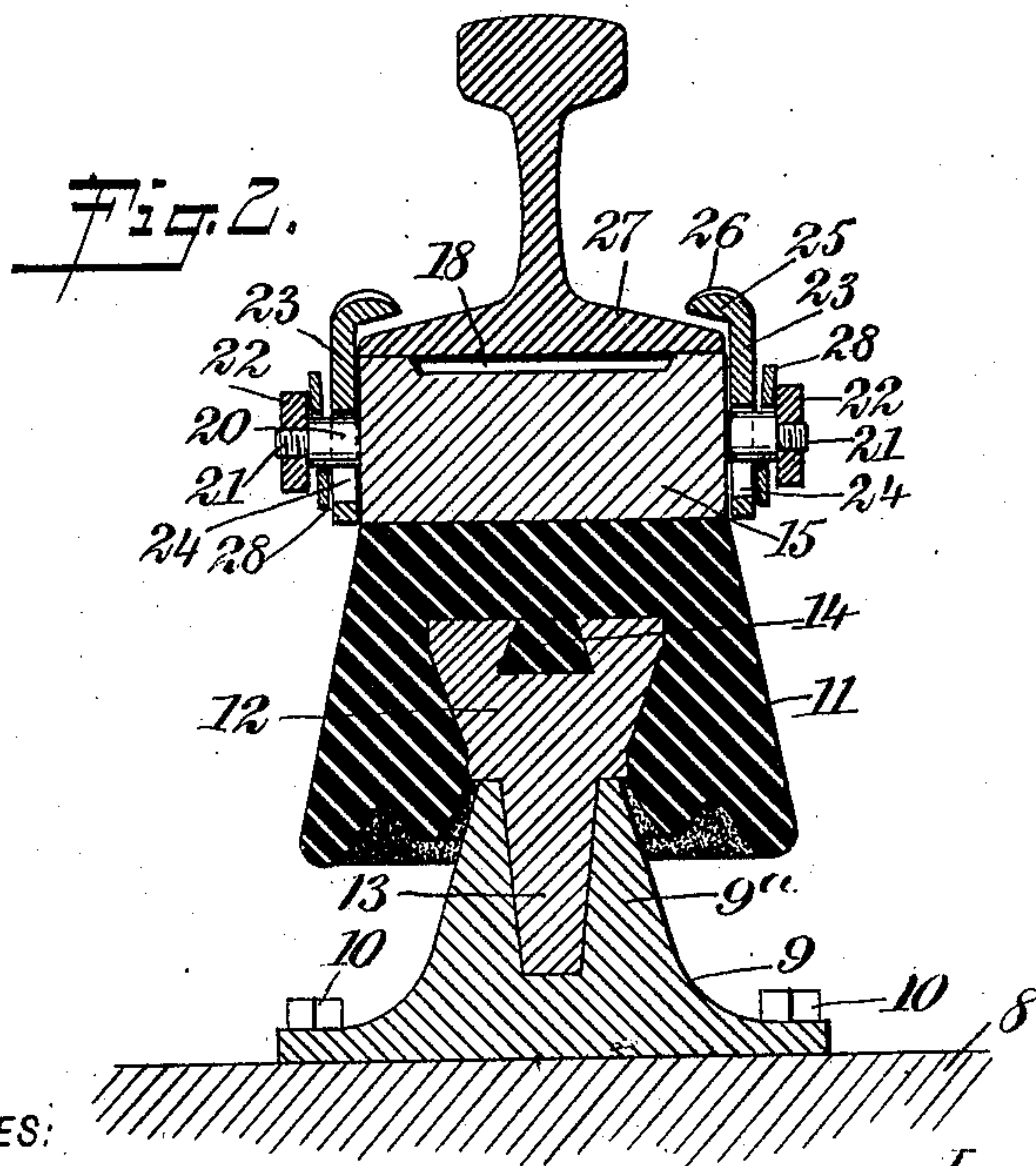
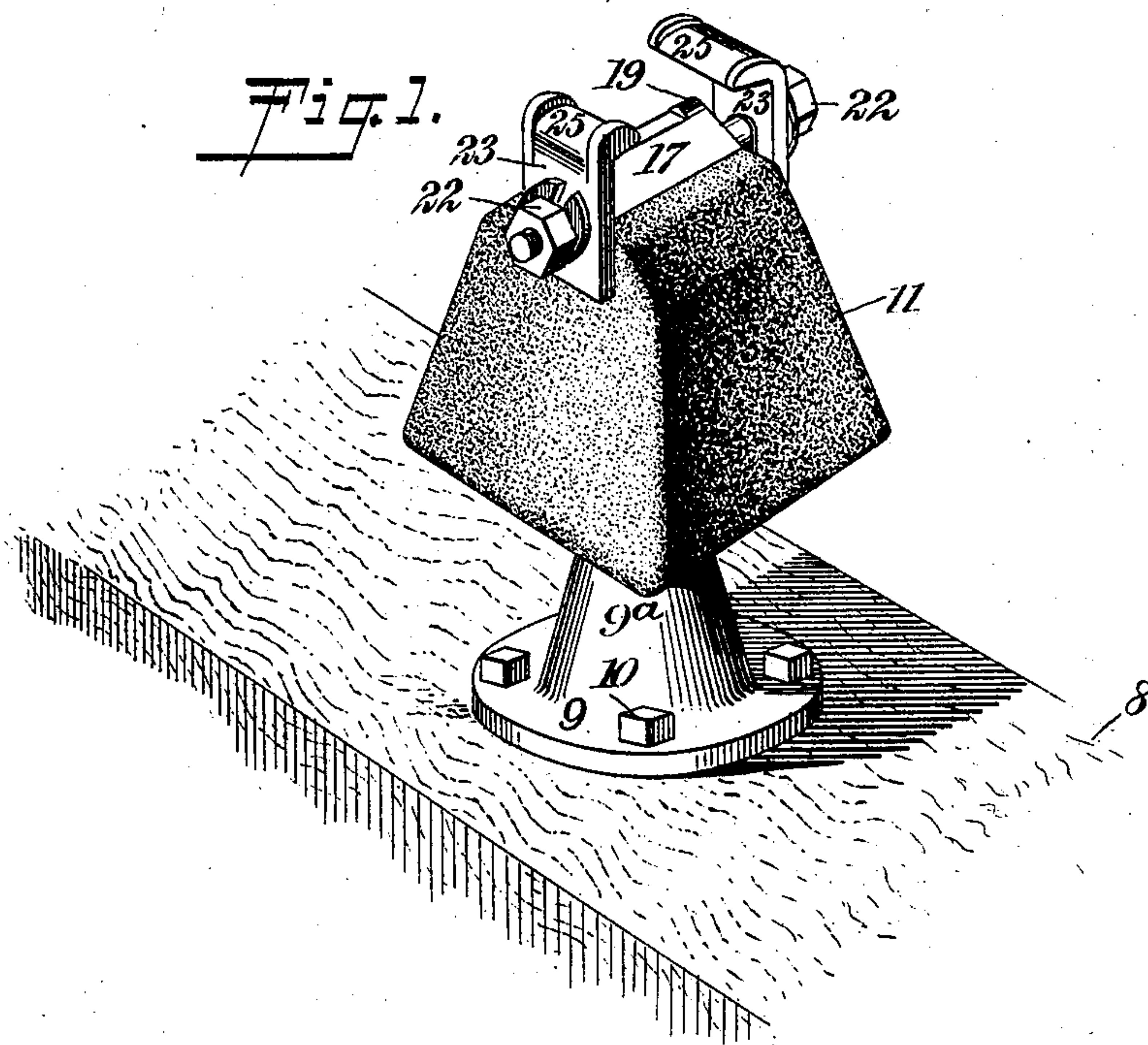
PATENTED JUNE 14, 1904.

L. STEINBERGER.  
SUPPORT FOR RAILS.

APPLICATION FILED FEB. 11, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

*William P. Goehs.*  
*Walton Harrison.*

INVENTOR

*Louis Steinberger*

BY

*Mumford*  
ATTORNEYS

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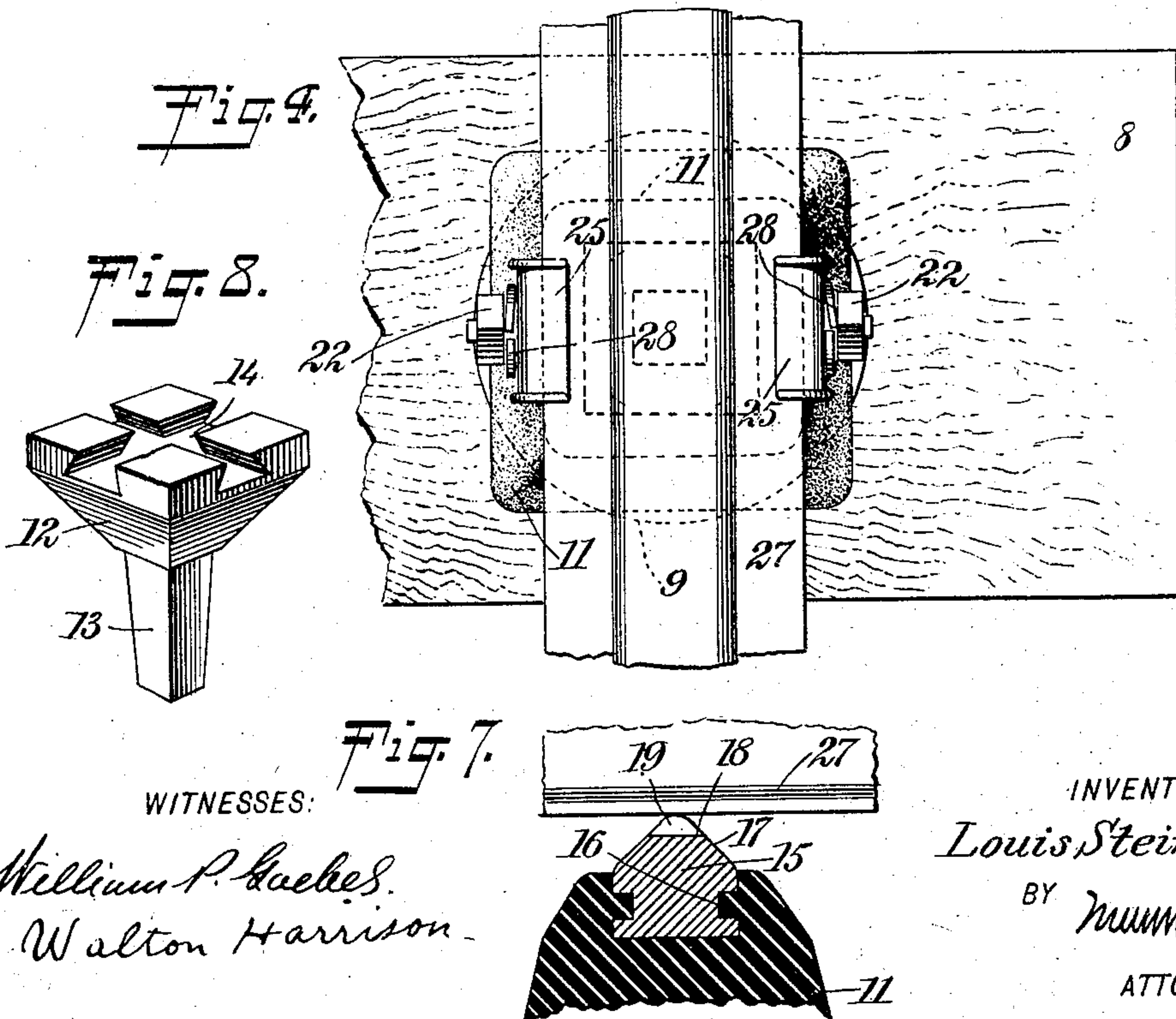
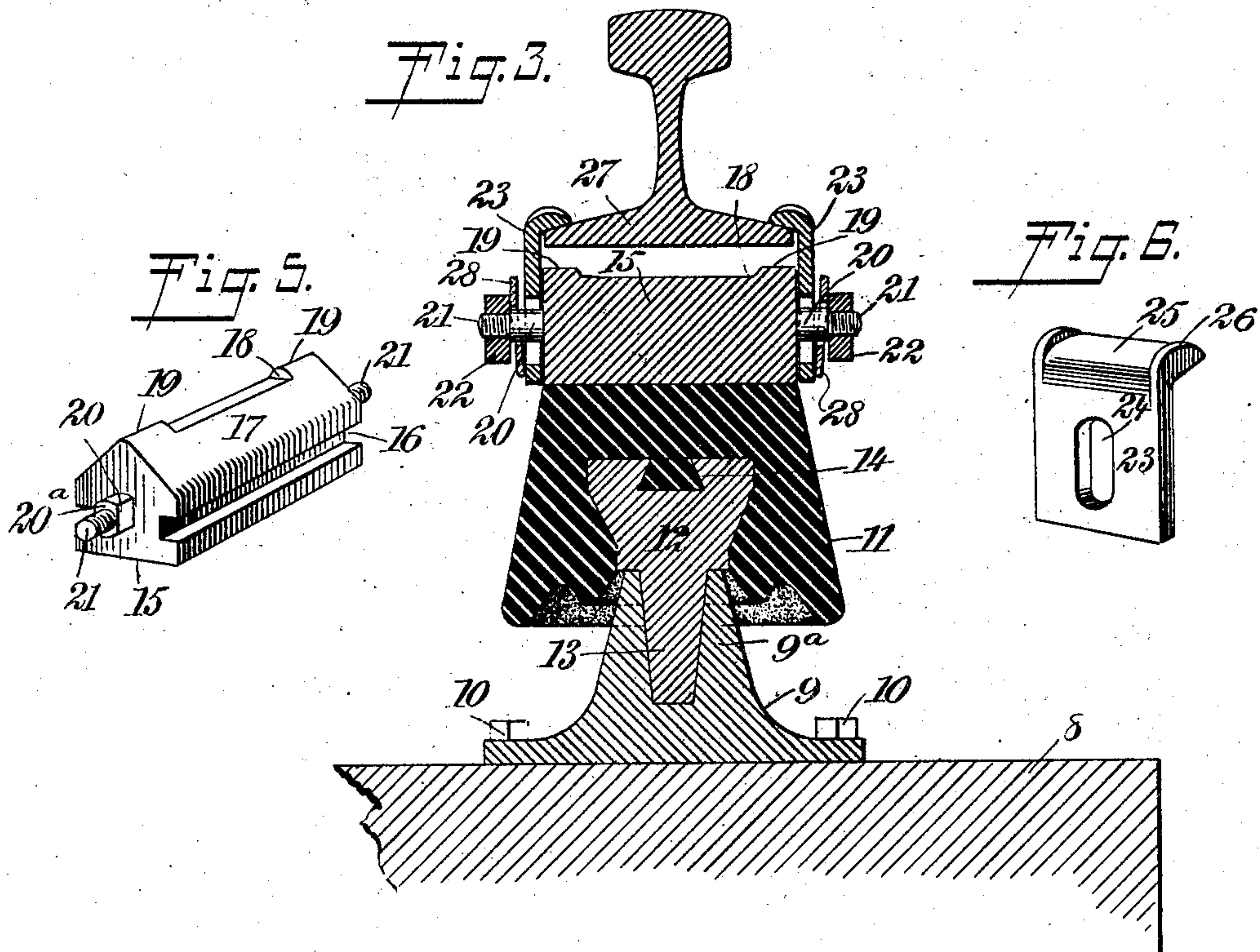
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*William P. Kaelin.*  
*Walton Harrison.*

INVENTOR

*Louis Steinberger*

BY

*Mumm*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

LOUIS STEINBERGER, OF NEW YORK, N. Y.

## SUPPORT FOR RAILS.

SPECIFICATION forming part of Letters Patent No. 762,769, dated June 14, 1904.

Application filed February 11, 1904. Serial No. 193,090. (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 Support for Rails, of which the following is a full, clear, and exact description.

My invention relates to a means for supporting rails and admits of general use, but is particularly applicable to railway systems employing the so-called "third" rail for the purpose of distributing the electric current.

Among the several objects of my invention are the following: first, to permit a maximum relative movement as between the rail and its support in a plurality of directions; second, to provide means for taking up and distributing the pounding action which takes place as between the rail and its supports during the passing of trains; third, to admit of the removal or the replacing of any of the parts or the entire support without the necessity of raising or removing the rail or interfering with any of the other supports or otherwise interrupting the traffic; fourth, to provide a support embodying the most thorough form of insulation and possessing the greatest mechanical strength; fifth, to provide means for relieving the supports of undue strains, thereby insuring a long term of usefulness in active service; sixth, to avoid breakage of any of the parts due to sudden relative movements as between the rail and its supports; seventh, to provide an insulated rail-support presenting the least possible mechanical contact-surfaces to the rail, thereby allowing the rail free movement and avoiding the possibility of the rail sticking to its support, and thereby bending or breaking it. These and other objects of my invention are described below and pointed out in the appended claims.

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 views.

Figure 1 is a perspective view of one of my supports ready to receive the rail. Fig. 2 is a vertical cross-section through the same, showing the rail in position. Fig. 3 is a view

somewhat similar to Fig. 2, but showing the rail-support moved downward relatively to the rail. Fig. 4 is a plan view of the support and rail in use. Fig. 5 is a perspective view of the bearing-block and its accompanying parts. Fig. 6 is a perspective view of one of the clamps connected with the bearing-block. Fig. 7 is a fragmentary vertical section at right angles to Fig. 2 and showing the rail resting upon the bearing-block, and Fig. 8 is a perspective view of the frusto-conical member 12.

Upon a cross-tie 8 is mounted a pedestal 9, having a recessed frusto-pyramidal portion 9<sup>a</sup> integral therewith, the pedestal being secured rigidly in position by means of bolts 10. A pyramidal block 11, of insulating material, is rigidly mounted upon a metallic member 12 of substantially frusto-pyramidal shape provided with a boss 13, also of substantially frusto-pyramidal shape, integral therewith and also provided with a dovetailed slot 14, as indicated more particularly in Figs. 2 and 3. Rigidly mounted within the insulating member 11 is a metallic bearing-block 15, provided with longitudinal grooves or angles 16, extending from one end of the block to the other, as indicated in Fig. 5. This bearing-block is further provided with facets 17, disposed obliquely, as shown in Fig. 7, and with a slot 18, which divides the top of the block into two rotund bearing-surfaces 19, upon which the rail 27 rests directly, as indicated in Figs. 2 and 7. The bearing-block is provided with projecting stems 20, each having substantially the form of a flattened cylinder and each stem being provided with a threaded portion 21 for engaging a threaded nut 22. The portions 21 being cylindrical and smaller than the stem 20, a shoulder 20<sup>a</sup> is formed, against which a nut 22 may be tightly jammed.

Disposed at opposite ends of the bearing-block 15 are clamping members 23, each provided with a slot 24 and with a tongue 25 and ribs 26, disposed upon the outer edges of the tongue, as shown more particularly in Fig. 6. A spring-washer 28 is interposed between each nut 22 and the adjacent clamping member 23. The slot 24 is of the shape indicated in Fig. 6 and fits neatly over the flattened cy-



lindrical stem 20, being thereby prevented from turning in either direction, and thus held at all times substantially vertical. The rail-base 27 is disposed intermediate the clamping members 23 and is free to move either in the general direction of its length or in a direction crossing the same. When the rail moves laterally or in a direction crossing its general length, it presses against one or the other of the clamping members 23, thereby compressing the spring-washer 28 and forcing the clamping member 23 a little to one side. If the rail remains in this position, the clamp simply presses tightly against its edge; but when the rail moves back in the opposite direction the particular clamping member 23 simply moves up against the adjacent end of the bearing-block 15.

The normal position of the several parts is indicated in Fig. 2. When, however, from any cause, such as the passing of a train, the cross-tie 8 is depressed a little relatively to other cross-ties and to other supports for the rails, the bearing-block 15 moves downward, carrying with it for a little distance the clamping member 23. Should the downward movement be so great that the bent portions 25 or hooks of the clamping members 23 engage the rail-base 27, no strain is thereby thrown upon the clamping members 23. The stems 20 simply move downward in the slots 24, as indicated in Fig. 3, and no strain is thrown upon any part. When the stems 20 reach the bottoms of these slots 24, should the tie be further depressed the pedestal 9 simply moves downward with the tie, and the body portion of the support will be suspended on the rail-base 27. In other words, the bearing-block 15 is free to move downward a distance representing the aggregate distance it can move before the tongues 25 engage the rail added to the vertical length of the slots 24. This aggregate movement is necessary before the tongues 25 of the clamping members 23 engage the base of the rail 27. The arrangement described therefore allows a considerable relative movement as between the rail and the support. So, also, should the rail move laterally or in a direction crossing its general length the clamping members 23, by moving laterally and compressing the spring-washers 28, allow considerable play to the rail, the entire lateral play of the rail being the sum of the lateral movements which can be given to both clamping members 23. If, for instance, each clamping member be allowed to move laterally one-half of an inch, the total lateral movement of the rail from one of its extreme positions to the other is one inch. It is evident that owing to the mobility of the parts when in operative action this support will stand the severest usage without danger of being destroyed.

It will be noted that the insulation 11 is so distributed relatively to the member 12 as to

form a very strong and reliable mounting for the rail. The frusto-pyramidal form of the member 12 prevents this member from becoming detached from the insulating material, and the dovetailed slot 14 also contributes to this end. The frusto-pyramidal boss 13, because of its tapering form, is readily detachable from the frusto-pyramidal portion 9<sup>a</sup> of the pedestal 9. Indeed, in extreme cases where from some unusual cause the cross-tie 8 is depressed an extraordinary distance downward the frusto-pyramidal portion 9<sup>a</sup> of the pedestal simply becomes detached from the boss 13, no part of the mechanism being broken or strained. Owing to the tapered form of the boss 13 the body portion of the support will automatically right itself as soon as the depressed tie moves upward after the passing of the car or train.

I do not limit myself to the particular form of the several members herein shown, as other forms may be used without departing from the spirit or scope of my invention and as will readily suggest themselves to persons skilled in the art.

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

1. A support for rails, comprising a bearing-block, means for supporting the same, a rail loosely engaging said bearing-block, and mechanism for allowing the portion of said rail engaging said bearing-block to move beyond the edges thereof.

2. A support for rails, comprising a member upon which the rail may rest, in combination with mechanism for allowing said rail to project slightly beyond the extreme boundaries of said member.

3. A support for rails, comprising a bearing-block provided with surfaces for engaging a rail and also provided with projecting stems, clamping members provided with slots engaging said stems and also provided with portions for engaging said rail, spring-washers mounted upon said stems and engaging said clamping members, and means for holding said spring-washers against said clamping members.

4. A support for rails, comprising a member provided with bearing-surfaces for engaging a rail and further provided with projecting stems having shoulders, clamping members provided with mutilations engaging said stems and with portions for engaging said rails, resilient members partially encircling said stems, and mechanism for forcing said resilient members against said clamping members.

5. A support for rails, comprising a member for supporting a rail, means for supporting said member, clamping mechanism connected with the end of said member and free to engage said rail, and means for tensioning said clamping mechanism relatively to said rail.



6. A support for rails, comprising a member provided with bearing-surfaces upon which a rail rests loosely, and also provided with stems, clamping members provided with slots engaging said stems and also provided with portions to be engaged by said rail, the arrangement being such that said member may drop vertically with relation to said rail and that said clamping members may move laterally in relation to said bearing member, and means for automatically restoring said clamping members relatively to said member when said member is again raised relatively to said rail.

7. A support for rails, comprising a metallic member provided with bearing-surfaces, means for supporting said metallic member, clamping members mounted upon said member and each movable in two independent directions relatively thereto, said clamping members each being provided with a portion to be engaged by said rail, and means for restoring said clamping members to their normal position relatively to said member.

8. A support for rails, comprising a member provided with bearing-surfaces to be engaged by a rail and also provided with laterally-projecting stems, clamping members each provided with a portion to be engaged by said rail and also provided with a slot for engaging one of such stems, spring-washers partially encircling said stems, and revoluble nuts to be screwed upon said stems and tightened against said spring-washers for the purpose of tensioning said clamping members.

9. A support for rails, comprising a metallic member having a substantially frusto-pyramidal portion provided with a dovetailed mutilation, a body of insulating material engaging said frusto-pyramidal portion of said member and filling said mutilation, means for supporting said metallic member, and mechanism connected with said body of insulating material for supporting a rail.

10. A support for rails, comprising a member provided with surfaces for engaging a rail, a body of insulating material connected with said member, a metallic member rigidly secured to said body of insulating material and provided with a downwardly-projecting portion of substantially frusto-pyramidal form, and a pedestal engaging said downwardly-projecting portion of substantially frusto-pyramidal form.

11. In a support for rails, the combination of a pedestal provided with a substantially frusto-pyramidal hollow portion, a metallic member provided with a substantially frusto-pyramidal portion engaging the same, a body of insulating material partially enveloping said last-mentioned metallic member, and mechanism connected with said body of insulating material for sustaining a rail.

12. As an article of manufacture, a metallic member provided with a stem projecting

therefrom, and also provided with surfaces for sustaining a rail.

13. As an article of manufacture, a metallic member provided with stems projecting therefrom, each stem having a portion substantially of the form of a flattened cylinder, and also having a portion to be engaged by a fastening member, said member being further provided with surfaces for sustaining a rail.

14. As an article of manufacture, a metallic member of elongated form provided with surfaces for sustaining a rail, said member being further provided with slots to be engaged by a body of insulating material.

15. As an article of manufacture, a bearing-block consisting of an elongated member having portions for sustaining a rail, and also having slots extending throughout its entire length, for the purpose of engaging the body of insulating material.

16. As an article of manufacture, a bearing-block consisting of a longitudinal member having rotund portions integral therewith to be engaged by a rail, and also having slots extending throughout its entire length to be engaged by the insulating material.

17. A support for electric conductors, comprising a metal block provided with means upon which a rail may rest, and also provided with laterally-projecting stems, clamping members provided with means for engaging said stems and also provided with a portion for engaging a rail, resilient members engaging said stems, an insulating member engaging said metal block, and means for supporting said insulating member.

18. As an article of manufacture, a bearing-block consisting of a longitudinal member having a raised portion to be engaged by a rail, and also having a portion at each end for connecting clamping members thereto, said block being further provided with means for securing it to a member of insulating material.

19. As an article of manufacture, a metallic member provided with a stem projecting therefrom, and a fastening member for engaging said stem and also provided with surfaces for supporting a rail.

20. A support for electric conductors, comprising a body of insulating material, a plurality of metallic members embedded therein, and a plurality of detachable metallic members engaging said plurality of metallic members.

21. A support for rails, comprising a bearing-block provided with bearing-surfaces, and further provided with projecting members, clamping mechanism loosely engaging said projecting members and free to move in a plane parallel with said bearing-surfaces, and means for supporting said bearing-block.

22. A support for rails, comprising a member provided with bearing-surfaces for engaging a rail, said member being partially embedded within insulating material, and clamp-



ing mechanism engaging said member and movable laterally in relation thereto, said clamping mechanism being provided with surfaces to be engaged by said rails.

23. A support for rails, comprising a body of insulating material, means for sustaining the same, a metallic member partially embedded within said body of insulating material and provided with a surface for engaging a rail, clamping mechanism mounted upon said member and movable relatively thereto under pressure of the rail in a direction lateral to the general length thereof, said clamping mechanism being provided with surfaces to be engaged by said rail, and means for limiting the extent of movement of said clamping mechanism when engaged by said rail.

24. A support for rails, comprising a member provided with bearing-surfaces for engaging a rail, clamping members disposed adjacent to said member and movable relatively thereto in a direction lateral to the general length of the rail, said clamping members being provided with portions to be engaged by said rail, and means for automatically restoring said clamping members to their normal positions when released from pressure of said rail.

25. A support for rails, comprising a member provided with bearing-surfaces for engaging a rail, said member being embedded in a mass of insulation, means for supporting said mass of insulation, and clamping members mounted upon said member and free to move both vertically and horizontally in relation thereto, said clamping members being provided with surfaces for engaging said rail.

26. A support for rails, comprising a metallic supporting member, a body of insulating material partially enveloping the same, a pedestal engaging said supporting member and movable relatively thereto when said supporting member is in operative position, and a block connected with said body of insulating material for the purpose of supporting a rail.

27. A support for rails, comprising a bearing member upon which a rail may rest, a body of insulating material engaging said metallic bearing member, a metallic supporting member engaging said body of insulating material and provided with a boss projecting downwardly, and a pedestal provided with a portion loosely encircling said boss.

28. A support for rails, comprising a member provided with a bearing-surface for engaging a rail, a body of insulating material connected with said member, a metallic member connected with said body of insulating material, and a pedestal supporting said metallic member and movable relatively thereto when in operative position for supporting a rail.

29. A support for rails, comprising a member provided with a bearing-surface for engaging a rail, a body of insulating material

connected with said member, a metallic member rigidly connected with said body of insulating material, and a pedestal connected with said metallic member and movable relatively thereto while the parts are in operative position for supporting a rail.

30. A support for rails, comprising a member provided with a bearing-surface for engaging a rail, a body of insulating material connected with said member for supporting the same, a metallic member anchored within said body of insulating material and provided with a portion projecting downwardly therefrom, and a pedestal loosely engaging said metallic member so as to permit relative movement as between said metallic member and said pedestal while in operative position for supporting a rail.

31. As an article of manufacture, a metallic member provided with means for supporting a rail, and also provided with clamping members movable laterally in relation to said metallic member.

32. As an article of manufacture, a bearing-block provided with a substantially wedge-shaped portion for supporting a rail, and also provided with a portion to be embedded within a member of insulating material.

33. As an article of manufacture, a member provided with means for supporting a rail, and also provided with clamping members movable both vertically and laterally in relation to said member.

34. A support for rails, comprising a bearing-block provided with a wedge-like portion for engaging a rail, a member of insulating material engaging said bearing-block, and means for supporting said member of insulating material.

35. A support for electric conductors, comprising a body of insulating material, a longitudinal metallic bearing member embedded therein, a tapered metallic supporting member also embedded within said body of insulating material, and a base having a tapered hollow portion mating said tapered metallic supporting member.

36. A support for rails, comprising a member for supporting a rail, means for sustaining said member, clamping mechanism connected with said member, and means for tensioning said clamping mechanism relatively to said member.

37. A support for rails, comprising a member provided with a bearing-surface for engaging a rail, a member of insulating material for supporting said member, means for sustaining said member of insulating material, and clamping mechanism engaging said first-mentioned member and movable both laterally and vertically in relation thereto.

38. A support for rails, comprising a member for supporting a rail, means for supporting said member, and laterally-acting spring-clamps connected with said member for per-



mitting a lateral movement relatively to the rail.

39. A support for rails, comprising a member for sustaining the weight of a rail, mechanism for supporting said member and provided with ends, clamping mechanism connected with said ends, and means for varying the space between said clamping mechanism while the same is in operative position.
40. A support for rails, comprising a member for supporting a rail, said member being

provided with a portion for engaging a clamping mechanism, means for allowing vertical and lateral movement of said clamping mechanism, and means for supporting said member. 15

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

LOUIS STEINBERGER.

Witnesses:

WALTON HARRISON,  
EVERARD BOLTON MARSHALL.