

No. 762,768.

PATENTED JUNE 14, 1904.

L. STEINBERGER.

RAIL.

APPLICATION FILED DEC. 16, 1903.

NO MODEL.

Fig. 1.

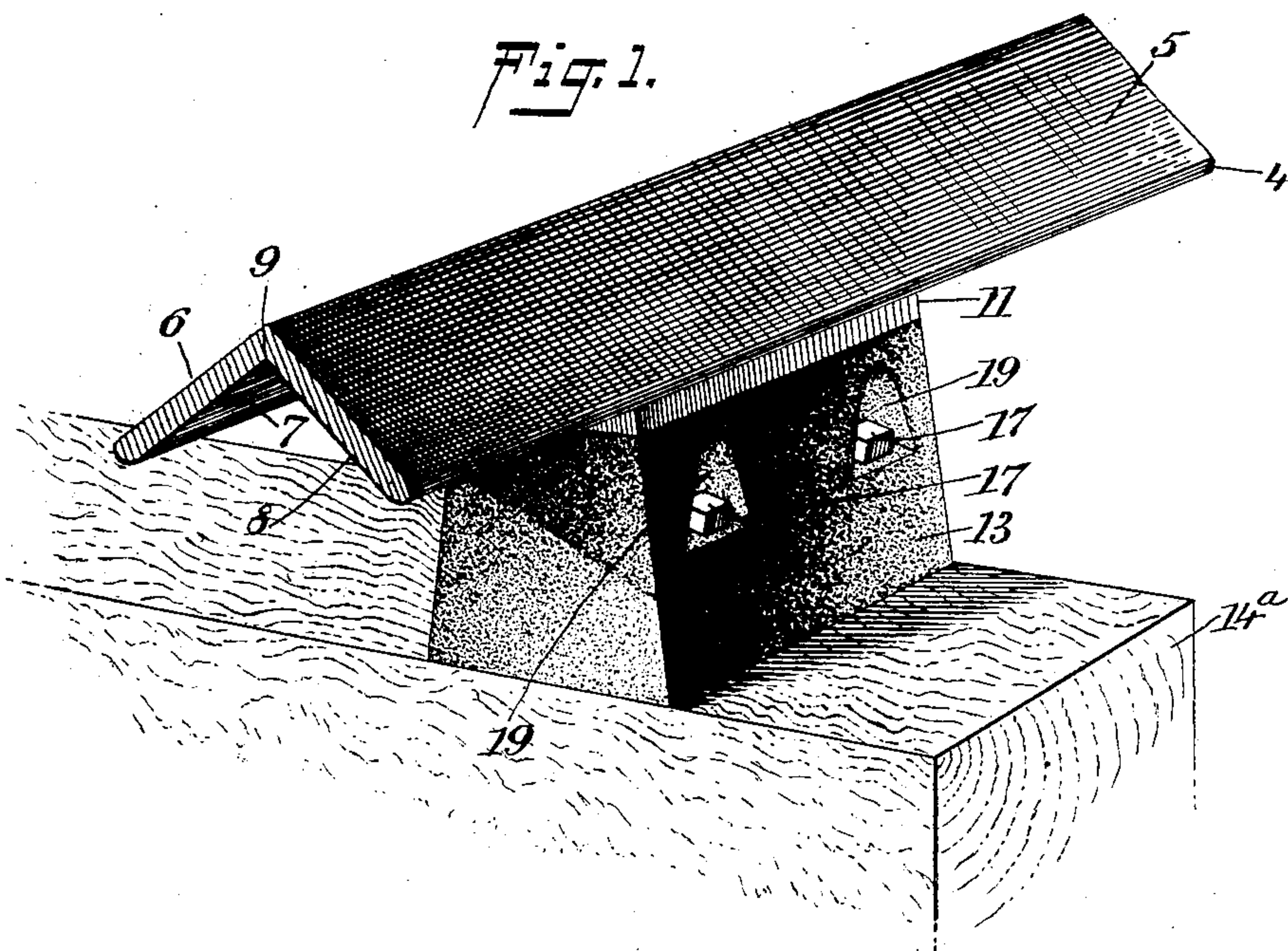


Fig. 2.

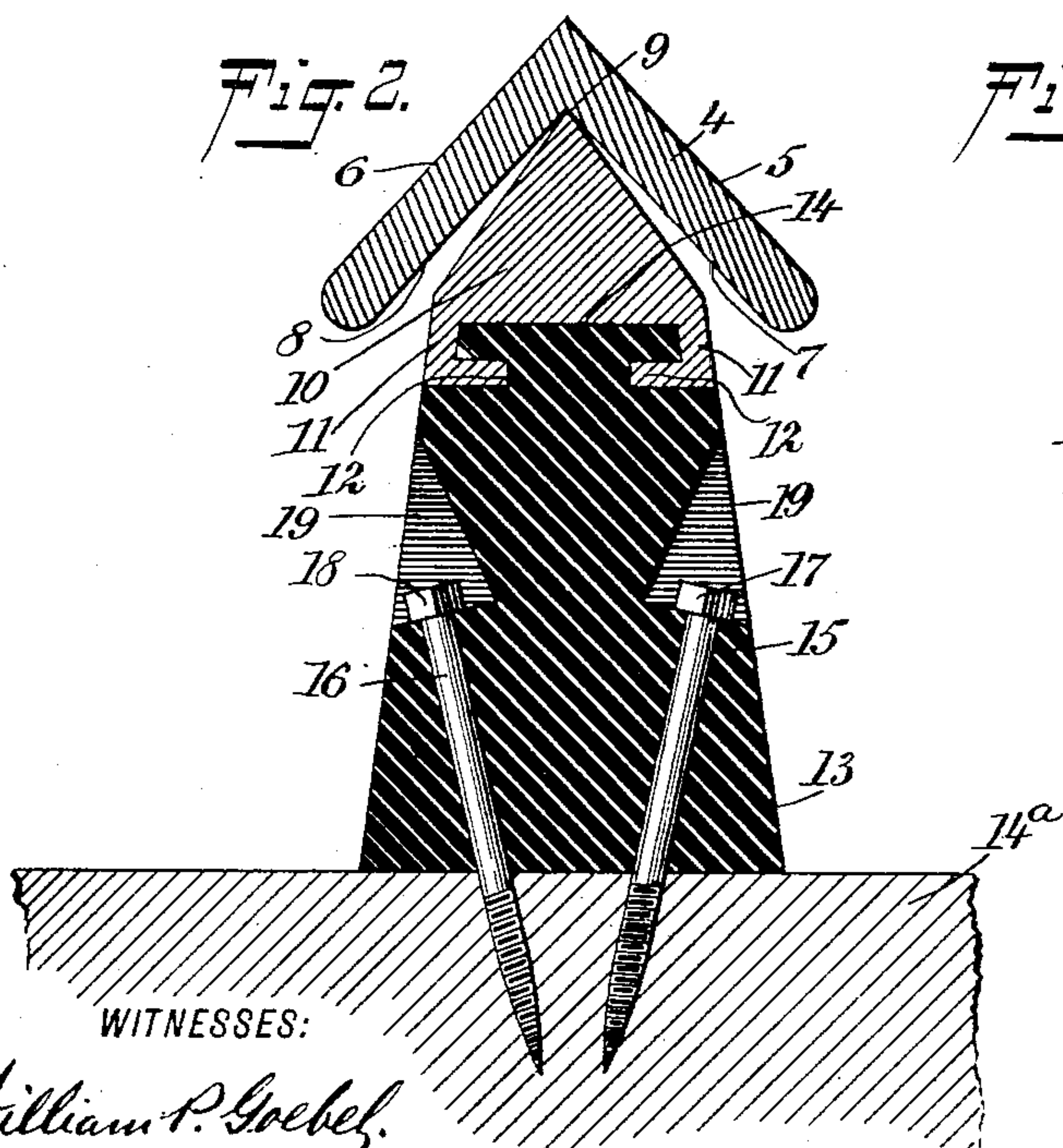
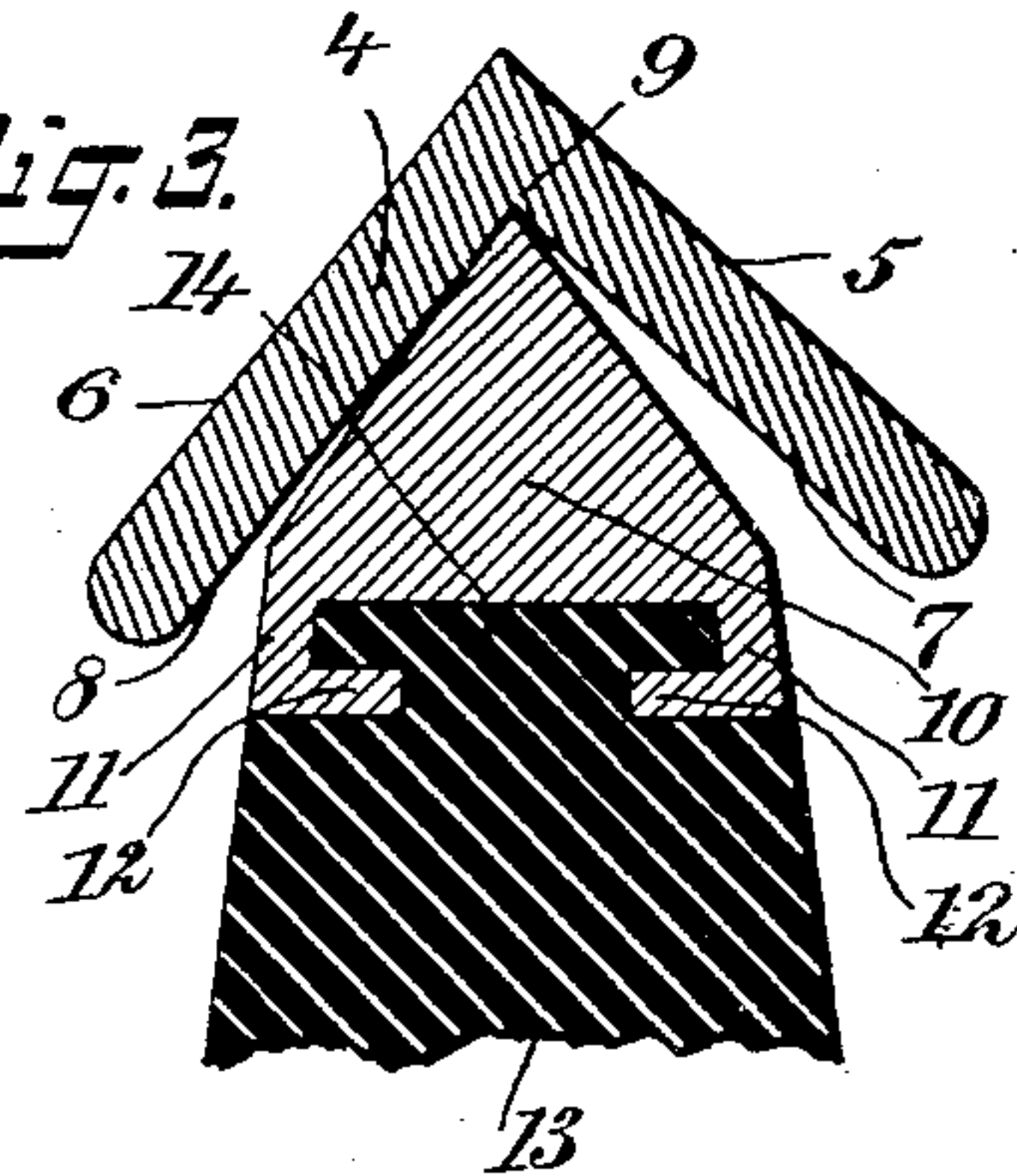


Fig. 3.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LOUIS STEINBERGER, OF NEW YORK, N. Y.

## RAIL.

SPECIFICATION forming part of Letters Patent No. 762,768, dated June 14, 1904.

Application filed December 16, 1903. Serial No. 185,359. (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 Rail, of which the following is a full, clear, and exact description.

My invention relates to rails and admits of general use, but applies more particularly to rails of the kind usually designated "third" rails and employed for supplying current to electrically-driven vehicles.

My invention embodies certain advantageous features, among them being provision for allowing the rail to rock slightly during the passing of a train, thereby effecting a more ready adjustment between the rail and the collector-shoe and insuring a more constant and nearer perfect electrical contact; for providing a bearing-surface of considerable length for the purpose of distributing the pounding action which takes place between the rail and the support during the passing of a train; for relieving both the rail and the support of undue strains; for limiting the movements thus set up in the rail; for supporting the rail in a position of comparative security as against displacement; for the purpose of more effectively shedding rain, sleet, snow, &c.; for more thoroughly insulating the rail from the cross-tie, and for providing a form of rail that will be more readily distinguishable from the ordinary track-rails, thereby preventing accidents.

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 showing my invention ready for use. Fig. 2 is a vertical section through the rail and one of the supports therefor, showing the several parts as occupying their normal position of inactivity; and Fig. 3 is a fragmentary view somewhat similar to Fig. 2, but showing the rail rocked or careened slightly, as would often occur incidental to the uneven pressure of the trolley-shoe because of the de-

pression of certain of the ties by the weight of the train passing over them.

The rail-section 4 is made, preferably, of angle metal, as shown, and is provided with external or upper contact-faces 5 6, to be engaged by the collector-shoe, and with internal or lower contact-faces 7 8, to be pressed into mechanical contact with the wedge-shaped metallic member 10. The inner or lower contact-faces 7 8 are simply flat surfaces disposed in different planes and converging to a line 9, which rests directly upon the apex of the wedge-shaped member 10. This wedge-shaped member 10 is provided with flanges 11, preferably integral therewith and provided with portions 12, extending toward each other, as shown. The portions 11 12, just mentioned, are for the purpose of enabling the wedge-shaped member 10 to maintain a secure grip upon the body 13 of insulated material. This material is preferably forced under pressure into contact with the lower portion of the wedge-shaped member 10, so that a cat-head 14, of insulated material, is dovetailed into the space formed between the flanges 11 12. This arrangement holds the wedge-shaped member 10 rigidly and permanently in position upon the mass 13 of insulating material.

One of the cross-ties is shown at 14<sup>a</sup>, and upon it rests directly the mass 13 of insulating material. By means of bolts 15 16, provided with heads 17 18, the mass of insulating material is securely fastened upon the cross-tie. Apertures 19 are provided in the insulating material for the bolt-heads 17 18.

My invention is used as follows: The rail-section 4, of angle metal, simply rests upon the wedge-shaped member 10 and normally occupies the position indicated in Fig. 2. Owing to depression of the ties due to the weight of the train, however, the rail may careen within certain limits, as indicated in Fig. 3, the limit of this motion being reached when one of the suafaces 7 or 8 engages the adjoining portion of the wedge-shaped member 10. This limitation of the movement of the rail relatively to the wedge-shaped member is for the purpose of preventing the rail from being dis-



lodged from the wedge-shaped member. The rail acts as a shed for the wedge-shaped member and for the insulating support therefor, protecting these parts from the weather and preventing water from insinuating itself between the wedge-shaped member and the mass of insulating material. While the rail is supported and is free to rock as above described, its center of gravity is always below the apex of the wedge-shaped member, so that the rail can never be dislodged from its position except that it be raised bodily. In other words, the rail consists of a longitudinal saddle-like member, the heaviest portion of which hangs from a fulcrum formed by the contact-line between it and the wedge-shaped member.

I do not limit myself to a wedge-shaped rail, as any other saddle-shaped member may be used; neither do I limit myself to the particular form of support shown, nor of any particular conformity for any individual part, nor in all cases to a third rail.

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

1. A third rail, comprising a member of insulating material provided with means whereby it may be supported, a substantially wedge-shaped metallic member mounted upon said member of insulating material, and a metallic member mounted upon said wedge-shaped member and free to swing thereupon, said metallic member being further provided with mechanical contact-surfaces disposed in different planes for the purpose of engaging different portions of said wedge-shaped member.

2. A third rail, comprising a supporting member of insulating material provided with a cat-head, a metallic member provided with a portion engaging said cat-head for the purpose of securing said members rigidly together, and a rail-section engaging said metallic member and movable relatively thereto.

3. A third rail, comprising a metallic member provided with oppositely-disposed surfaces lying in different planes, means for supporting said metallic member, and a rail-section mounted upon and loosely engaging said metallic member and provided with mechanical contact-surfaces for engaging said surfaces of said metallic member.

4. A third rail, comprising a member of insulating material, metallic fastening members for securing the same upon a cross-tie, a metallic supporting member mounted upon said member of insulating material and provided with contact-faces, and a rocking member mounted upon said metallic member and having its center of gravity below the point of support, said metallic member being free to engage said faces.

5. A third rail, comprising a supporting member of insulating material provided with apertures, bolts engaging said apertures, a metallic member mounted upon said member of insulating material and provided with a

comparatively sharp edge, and a rocking member provided with a surface for engaging said sharp edge.

6. A third rail, comprising a metallic member provided with flanges, a member of insulating material engaging said member and partially surrounding said flanges, for the purpose of securing said metallic member and said member of insulating material together, and a rail mounted upon said metallic member and free to swing.

7. A third rail, comprising a supporting member having a sharp edge disposed in the form of a line, and a rail provided with a portion for engaging said sharp edge, said rail being free to swing upon said sharp edge, and having its center of gravity below said edge and being provided with surfaces for engaging said support and thereby limiting the movements of said rail.

8. A third rail, comprising a support provided with a comparatively sharp edge, and a rail fulcrumed upon said sharp edge and having its center of gravity below the same.

9. A third rail, comprising a support provided with a comparatively sharp edge, and a rail fulcrumed upon said sharp edge and having its center of gravity below the same, said rail being further provided with electrical contact-surfaces disposed in different planes relatively to each other.

10. A third rail, comprising a support provided with a comparatively sharp edge, and a rail fulcrumed upon said sharp edge and having its center of gravity below the same, said rail being provided with portions for engaging said support, whereby its movements are limited.

11. A third rail, comprising a vertical supporting member having upon its upper portion a comparatively sharp edge, and a rail consisting of a substantially saddle-like member resting directly upon said edge and normally free to move relatively thereto.

12. A third rail, comprising a support provided with mechanical contact-surfaces, and a rail free to swing having a substantially saddle-like form and provided internally with surfaces for engaging said surfaces of said support.

13. A third rail, comprising mechanism provided with a supporting-surface, and a rail member mounted upon said mechanism and provided with a surface engaging said supporting-surface, said rail being free to rock and having its center of gravity below the intersection of said surfaces.

14. A third rail, comprising a supporting member, and a rail fulcrumed thereupon and free to rock relatively thereto, said rail having its center of gravity below its point of engagement with said support.

15. A third rail, comprising a supporting member, and a rail fulcrumed thereupon and free to rock relatively thereto, said rail hav-



ing its center of gravity below its point of engagement with said support and being provided with contact-surfaces for engaging said support, thereby limiting the movements of said rail relatively thereto.

16. A third rail, comprising a supporting member, and a rail fulcrumed thereupon and free to rock relatively thereto, said rail having its center of gravity below its point of engagement with said support, said rail being further provided with electrical contact-faces disposed in different planes.

17. A third rail, comprising a support, and a rail member mounted thereupon and free to swing relatively thereto, said rail member being provided with portions whereby it serves as a shed for protecting said support from the weather.

18. A third rail, comprising a support provided with a rocking rail fulcrumed thereupon, said rocking rail being provided with portions for sheltering said support from the weather.

19. A third rail, comprising a supporting member provided with a comparatively sharp edge, and a rail member of angle-iron fulcrumed thereupon, said rail member being of such conformity that its center of gravity is below the point of support.

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.