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PATENTED MAR. 6, 1906.

G. WESTINGHOUSE.  
SUPPORTING STRUCTURE FOR TROLLEY CONDUCTORS.  
APPLICATION FILED JAN. 23, 1905.

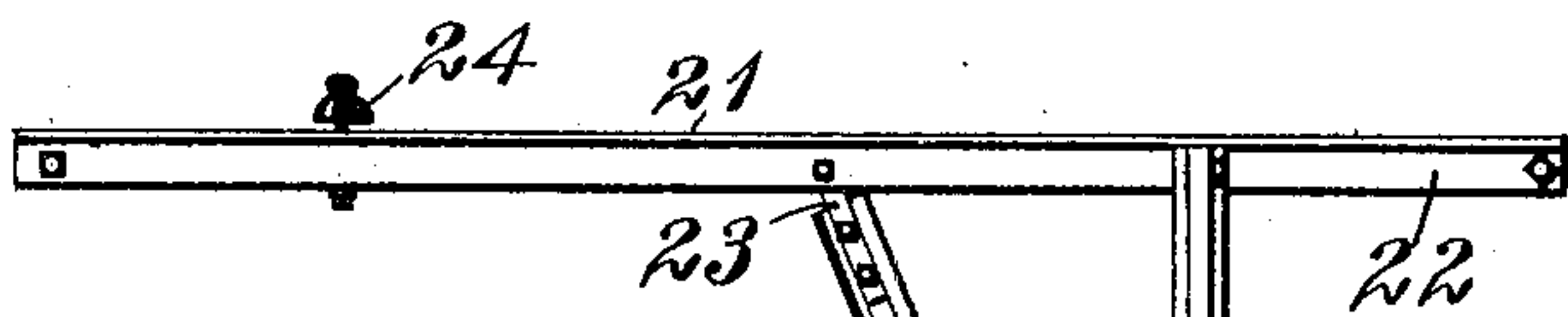


Fig. 1.

Fig. 2.

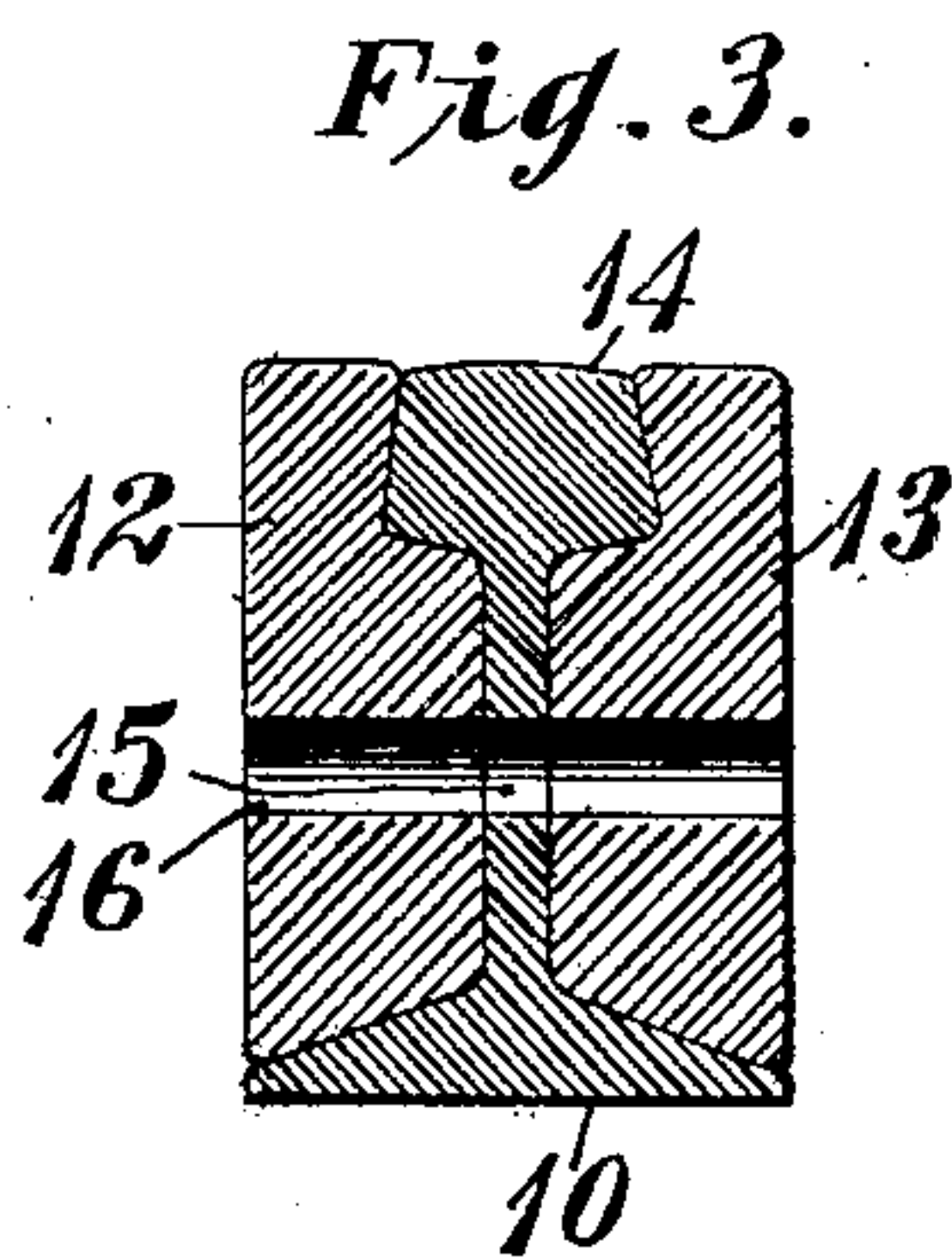
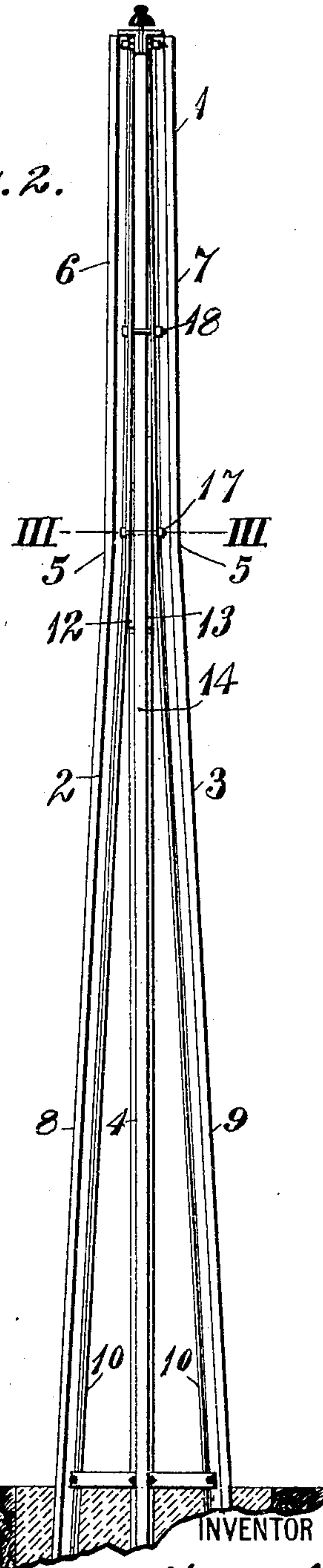


Fig. 3.

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GEORGE WESTINGHOUSE, OF PITTSBURG, PENNSYLVANIA.

## SUPPORTING STRUCTURE FOR TROLLEY-CONDUCTORS.

No. 814,339.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed January 23, 1905. Serial No. 242,321.

*To all whom it may concern:*

Be it known that I, GEORGE WESTINGHOUSE, a citizen of the United States, and a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Supporting Structures for Trolley-Conductors, of which the following is a specification.

My invention relates to electric railways equipped with overhead trolley-conductors, and particularly to the structures utilized for supporting such conductors.

The object of my invention is to provide a simple, inexpensive, and effective supporting structure the principal constituent elements of which are railroad-rails.

The equipment of railways for electric traction at high speeds over comparatively long distances makes desirable the utilization of rigid durable poles or their equivalents, and on account of the expense involved in equipping a long section of road with such structures it is desirable to separate them by as long intervals as may be possible without sacrificing safety and satisfactory operation. I propose to secure the desired rigidity of structure necessary for a wide separation of supports and also for satisfactory operation and at the same time materially reduce the cost of such structures by utilizing railroad-rails which have served their purpose as track-rails and have therefore been discarded and are no longer useful except as scrap-steel.

In the accompanying drawings, Figure 1 is an end elevation of a supporting structure embodying my invention. Fig. 2 is a side elevation of the structure shown in Fig. 1, and Fig. 3 is a detail sectional view on line III III of Fig. 2.

The principal elements of the supporting structure 1 are three railroad-rails 2, 3, and 4 of such length as may be required for the proper height of the structure. The rails 2 and 3 are preferably bent slightly at a suitable distance from the one end—as, for example, at substantially the point 5—so that the shorter portions 6 and 7 shall be approximately parallel, while the longer portions 8 and 9 at the other side of said point 5 diverge at a suitable angle. These rails 2 and 3 may be conveniently so arranged that the base-flanges 10 face each other, and between the two is located the third rail 4, the upper end 11 of which may be bent at a suitable angle to the main portion in order to increase the

angle between it and the upper ends 6 and 7 of the rails 2 and 3. The rails 2, 3, and 4 are so assembled that the rail 4 projects between the rails 2 and 3 at or near the point 5, near where the rails 2 and 3 are most conveniently bent, and in order that there may be a rigid connection between the rails at this point I provide two blocks 12 and 13, which may be either cast or machined, preferably the former, so as to fit the base-flanges 10, the wheel-flange 14, and the web 15 and be flush with the edges of the base-flanges. The base-flanges of the rails 2 and 3, the web of the rail 4, and the blocks 12 and 13 are drilled, as indicated at 16 in Figs. 2 and 3, to receive a bolt 17, which serves to rigidly clamp these parts together at that point. The base-flanges of the rails 2 and 3 are also drilled at one or more other points and clamped together by means of a bolt or bolts 18. The lower ends of the rails 2, 3, and 4 are suitably anchored, preferably in a body 19, of concrete, and adjacent to this body of concrete may be fastened together by suitable brace-pieces 20, which are bolted to the base-flanges of the rails, as indicated. A substantially horizontal bar 21, which may be a single T-bar or two angle-irons bolted together, as indicated, is supported upon the upper ends of the rail extensions 6, 7, and 11, the flanges 22 of this bar being bolted between the base-flanges of the extensions 6 and 7 and being fastened to the part 11 of the rail 4 by means of a plate or strip 23, which fits between the wheel and base-flanges of that strip and is securely bolted both to the web 15 and to the flange 22 of the bar 21.

Suitably supported upon the bar 21 is an insulator 24, from which the trolley-conductor may be supported and which will ordinarily serve to directly support a messenger wire or cable, which may hang in catenary curves and from which the trolley-conductor may be suspended by means of suitable hangers.

Instead of providing a single set of structures at one side of the track from which bars 21 project laterally it is within the scope of my invention to provide such structures at opposite sides of the track, between which extend either span wires or bars and which may be otherwise suitably modified within the scope of my invention.

The structure is such that only bending and drilling tools such as are in ordinary use by railroad men are required, and only a few inexpensive and easily-prepared pieces are



required in addition to the old rails which constitute the principal elements of the structure.

It will be understood that the form and arrangement of parts may be varied in other respects from what is shown. For example, it is not necessary to bend the rail 4, although I prefer to bend it in order to provide a better support for the bar 21.

I claim as my invention—

10 1. A supporting structure comprising two railroad-rails which are disposed in a substantially vertical plane and the lower ends of which diverge from each other, and a third rail that is rigidly clamped between the others and diverges from the plane thereof both above and below its junction therewith.

20 2. A supporting structure comprising three railroad-rails which are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

25 3. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them.

30 4. A supporting structure comprising three railroad-rails which are bent and assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them, and an approximately horizontal bar bolted to the upper ends thereof.

35 5. A supporting structure comprising three railroad-rails which are assembled in tripod form and bolted together and one of which diverges from the others both above and below its junction with them, means for securely anchoring the lower ends of said rails, and an approximately horizontal bar bolted to the upper ends thereof.

6. A conductor-support comprising two railroad-rails the bottom flanges of which are arranged face to face, a third rail disposed and bent to angular position with reference to the first-named rails and located between them, spacing-blocks between said rails, and bolts for clamping them together.

7. A conductor-support comprising three railroad-rails which are bent and bolted together at a point or points intermediate their ends to form a tripod structure and one of which diverges from the others both above and below its junction with them, means for anchoring the lower ends of the rails, and means projecting laterally from the upper ends of the rails for supporting a trolley-conductor.

8. A conductor-support comprising three railroad-rails two of which are disposed in substantially the same plane with their base, flanges fastened to each other, and the third of which is located between the other two and is provided with spacing-blocks, means for clamping said rails together, and means for securely anchoring their lower ends.

9. A conductor-support comprising three railroad-rails two of which are in one plane and the third in a plane at right angles thereto, and all of which are so assembled and bent as to form a tripod structure, means for clamping the three rails together, and a substantially horizontal arm projecting from the upper ends thereof.

In testimony whereof I have hereunto subscribed my name this 14th day of January, 1905.

GEO. WESTINGHOUSE.

Witnesses:

A. W. MONTGOMERY,  
BIRNEY HINES.