

No. 606,827.

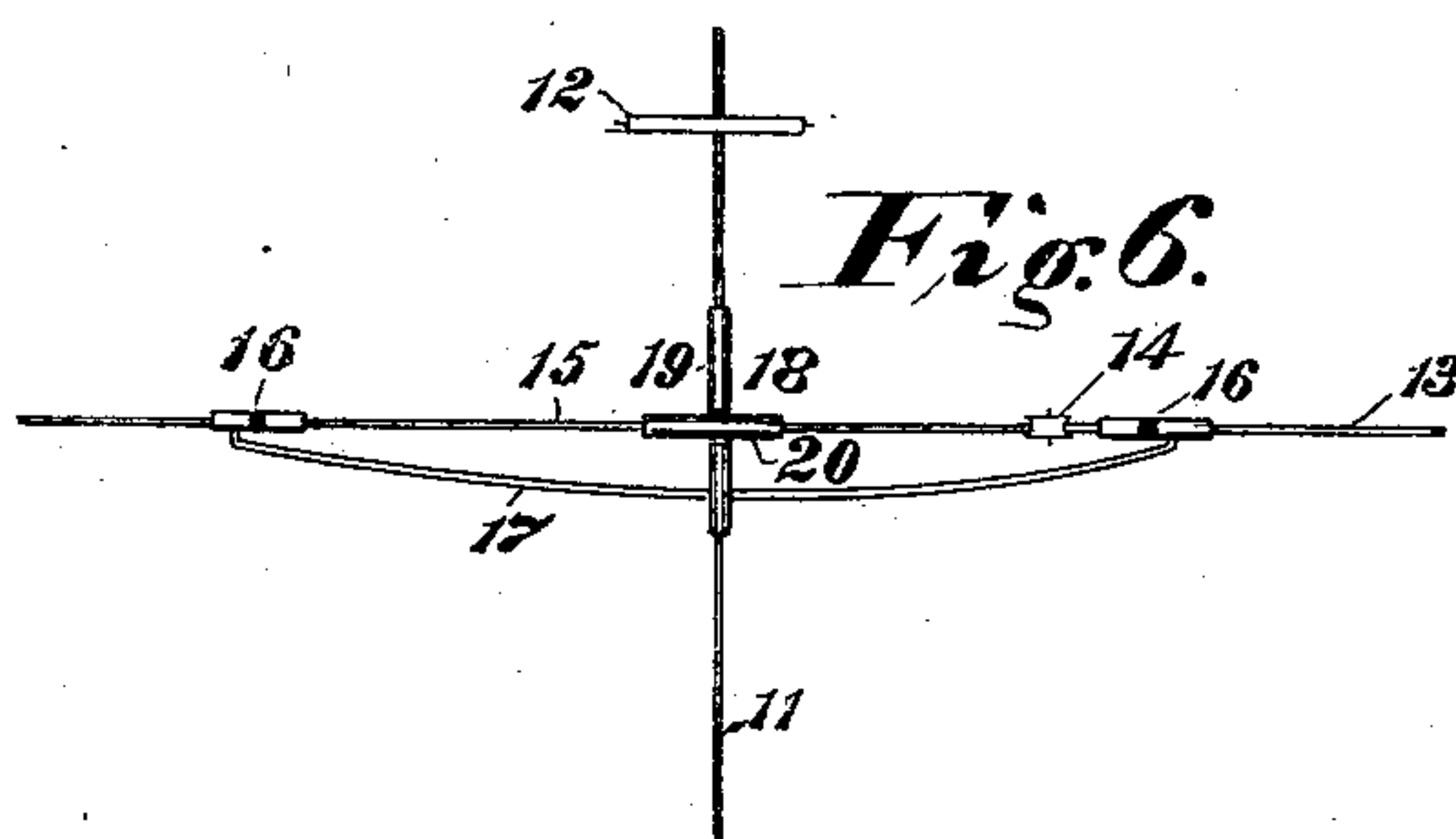
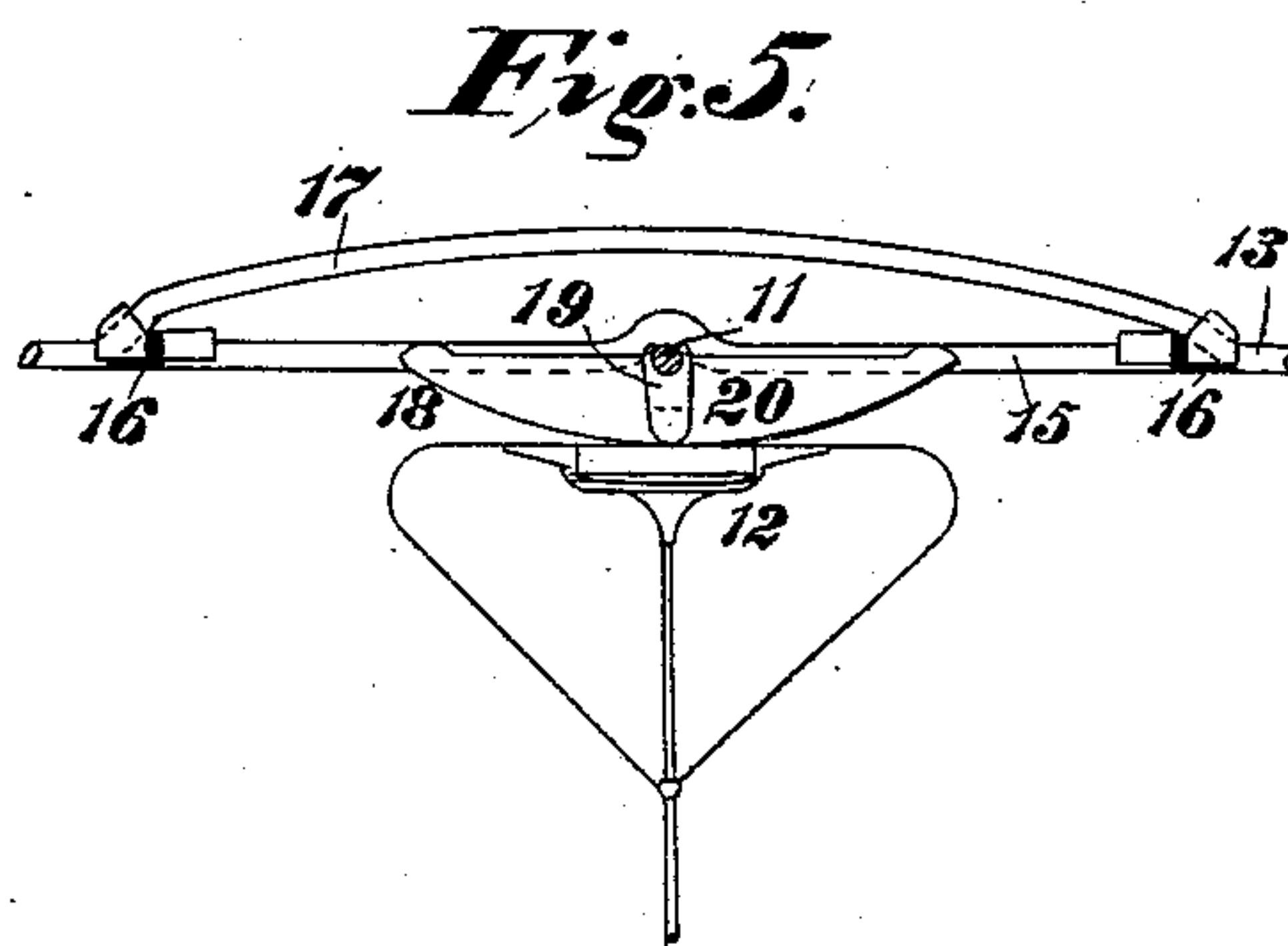
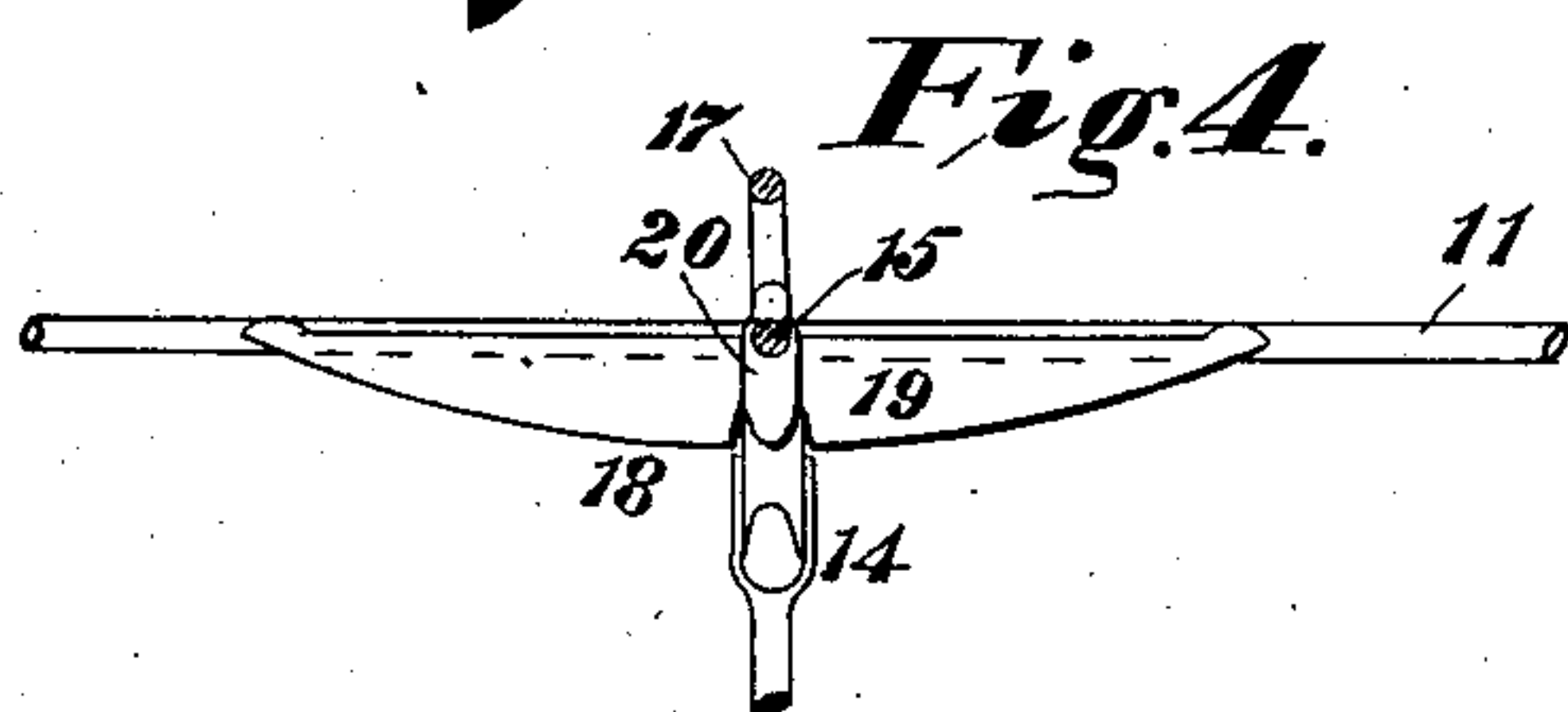
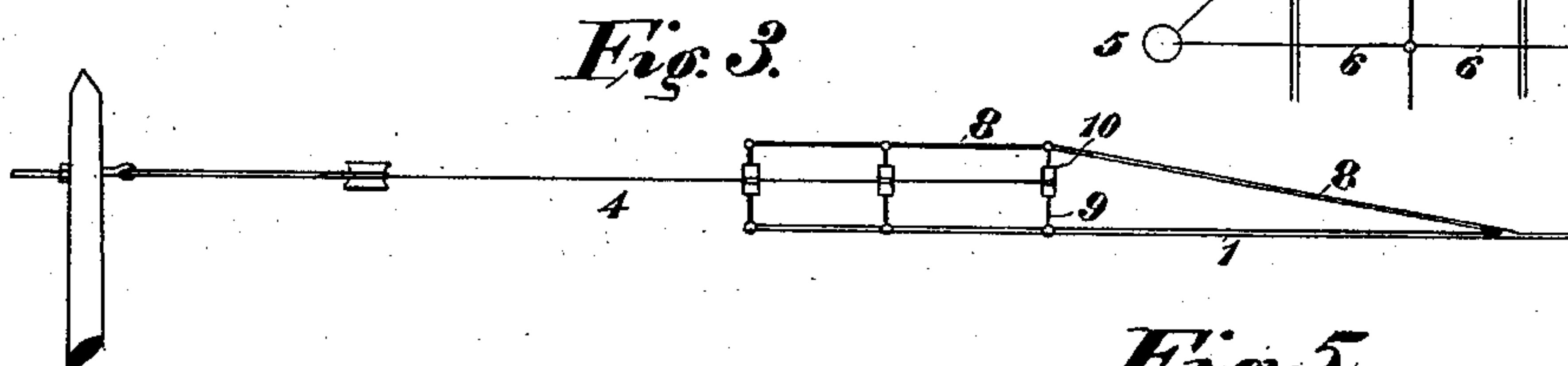
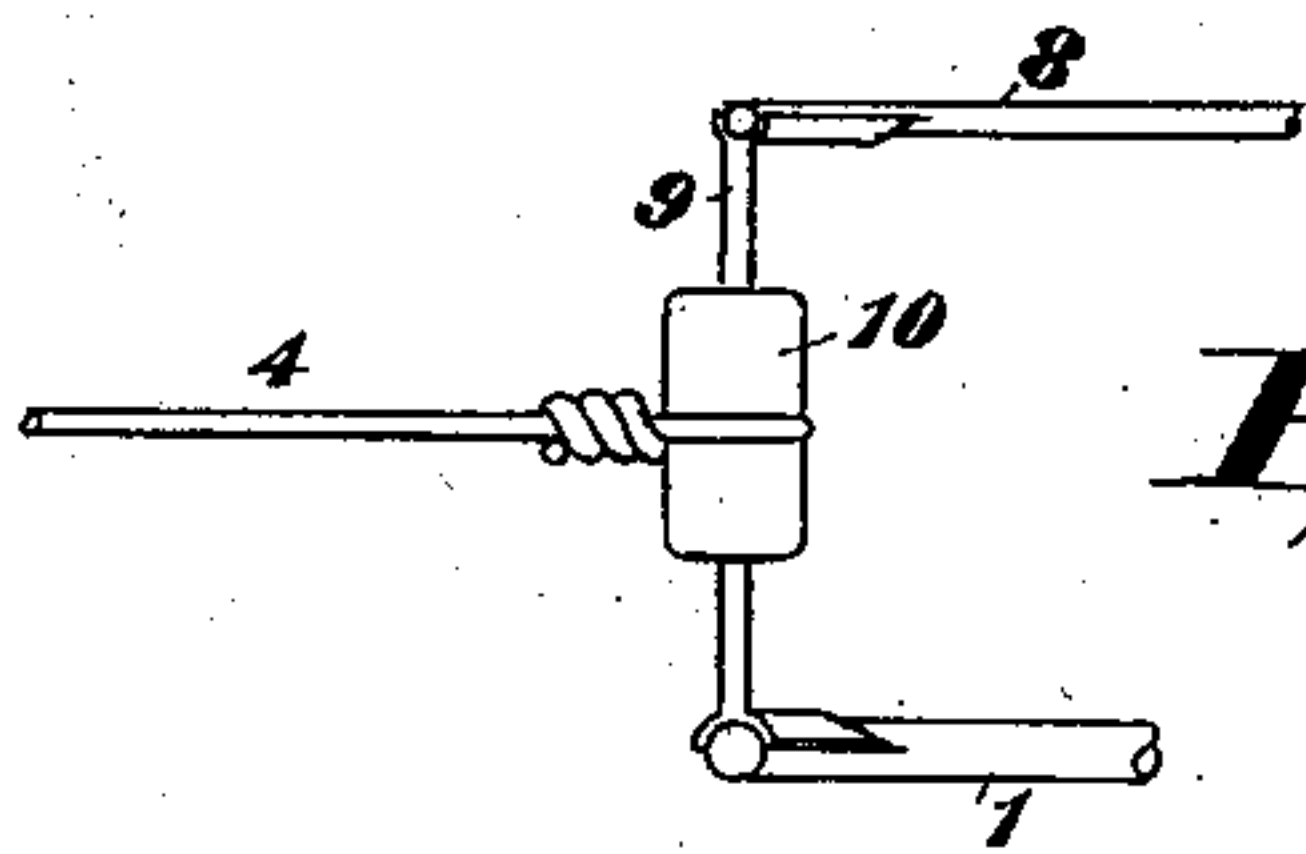
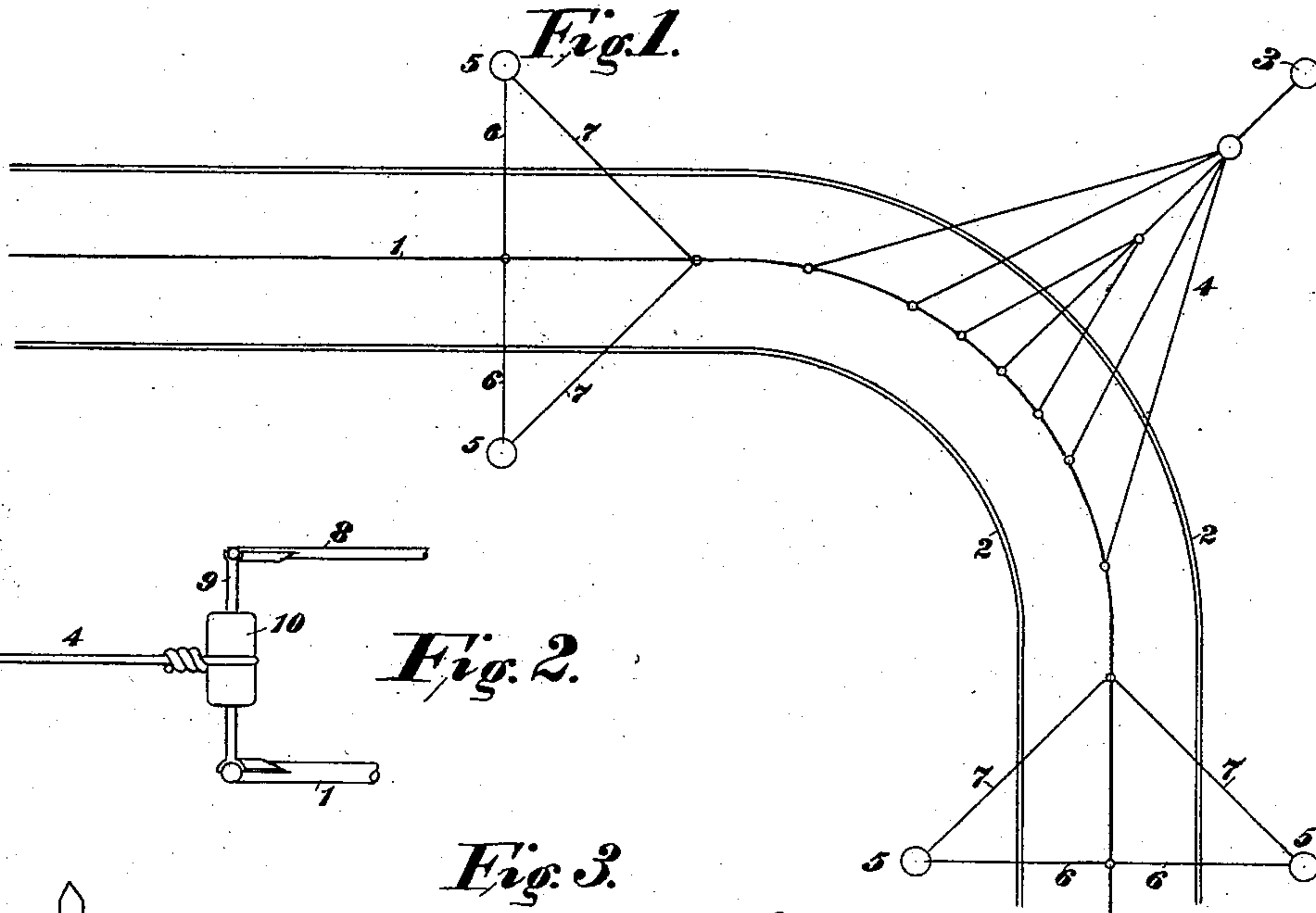
Patented July 5, 1898.

C. A. TERRY & H. P. DAVIS.

OVERHEAD CONSTRUCTION FOR ELECTRIC RAILWAYS.

(Application filed June 10, 1896.)

(No Model.)



WITNESSES:

Ethan D. Dodds  
Hubert C. Tenner.

INVENTORS

Charles A. Terry  
Harry P. Davis

BY

W. E. Carr  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

CHARLES A. TERRY, OF NEW YORK, N. Y., AND HARRY P. DAVIS, OF PITTSBURG, PENNSYLVANIA, ASSIGNORS TO THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA.

## OVERHEAD CONSTRUCTION FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 606,827, dated July 5, 1898.

Application filed June 10, 1896. Serial No. 594,993. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES A. TERRY, residing at New York, in the county and State of New York, and HARRY P. DAVIS, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, citizens of the United States, have invented a new and useful Improvement in Overhead Construction for Electric Railways, (Case No. 707,) of which the following is a specification.

Our invention relates to overhead conductors for electric railways and to supporting means therefor; and it has for one of its objects to provide means suitable for use in connection with either the grooved trolley-wheels ordinarily employed or with laterally-extending, sliding, or rolling contact devices which do not move laterally with reference to the car.

A further object of our invention is to provide a construction which is adapted for use in cases where a line using grooved trolley-wheels crosses one employing the laterally-extending contact devices above referred to.

It has heretofore been the usual practice to locate the pull-off wires employed in connection with overhead conductors at curves in the same plane with the supply-conductor in order that the conductor may be maintained permanently and under all circumstances in its proper position with reference to the track. Such a construction is desirable when employed in connection with lines using grooved trolley-wheels; but with any any other practical form of contact device the usual construction of pull-off devices cannot be employed on account of the obstruction thus presented to the passage of such contact devices. The usual form of crossover is also impracticable in connection with laterally-extending contact devices as well as where a system of one kind crosses that of another.

We have accordingly devised the apparatus hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a diagrammatic representation of a section of railway, including a curve, an overhead conductor, and pull-off devices therefor.

Fig. 2 is a side elevation of a section of a conductor provided with our pull-off devices. Fig. 3 shows in elevation the supports for the conductor at a curve. Figs. 4 and 5 are elevations of a crossing at right angles to each other, and Fig. 6 represents such a crossing viewed from below.

Referring now to the drawings in detail, 1 is a supply-conductor located at the usual height above the tracks 2.

3 is a pole or other stationary support to which are connected, by means of suitable intermediate devices, pull-off wires 4.

5 are poles located near the two ends of the curve shown, and from these poles the usual span-wires 6 extend to the conductor 1. Pull-off wires 7 also extend from the poles 5 to the conductor 1 at the ends of the curve. Instead of connecting the pull-off wires 4 to insulating devices upon the conductor substantially in the same horizontal plane therewith, as is usual, we provide an auxiliary wire 8 at the curve, which has substantially the same curvature as the supply-conductor and is preferably fastened directly thereto at its ends, as indicated in Fig. 3. This auxiliary wire is located directly above the conductor and is connected to it by means of suitable rods or posts 9. Mounted upon each of these rods or posts, substantially midway of its ends, is an insulator 10, which may be of any desired material and form suitable for this purpose. The pull-off wires 4 are securely fastened to these insulators, and are therefore located sufficiently above the supply-conductor to obviate any danger of contact between the same and the current-collecting devices which may be used in the system. At the same time the auxiliary wire 8 serves to maintain the supply-conductor in proper position with reference to the track.

In Figs. 4, 5, and 6, 11 is a supply-conductor intended to be used in a system employing a long sliding or rolling contact, such as is indicated diagrammatically at 12. 13 is a supply-conductor designed to be employed in a system using the grooved trolley-wheel of ordinary construction, such as is indicated at 14. A short length 15 of the conductor 13



is electrically cut out of the main circuit by means of suitable insulating devices, (indicated at 16,) the circuit being completed by means of a bridging-conductor 17, which will preferably be located vertically above the section 13, as is indicated in Fig. 5, but which may be otherwise located, as is indicated in Fig. 6, provided it is sufficiently above the supply-conductors to preclude any engagement of the current-collecting devices therewith. A casting 18, comprising two arms 19 and 20, is provided at the crossing for guiding the contact devices of the two systems. The angle between the arms of the casting will obviously be the angle between the two line conductors, and each arm is provided with a top groove for the reception of its respective conductor, as indicated. The arm 19 is provided with a recess at each side of the arm 20 for the passage of the flanges of the trolley-wheel 14.

It will be understood from the illustration and foregoing description that while the trolley-wheel 14 is in engagement with the conductor-section 15 or the casting 18 it will derive current from the line 11 and that each of the contact devices will move readily along its own conductor without interfering with the structure of the other system.

While we have described a specific means for accomplishing the ends set forth, we desire it to be understood that such means may be varied as regards the specific construction of parts and the relative location and arrange-

ment of the same without departing from the spirit and scope of the invention.

We claim as our invention—

1. An overhead supply-conductor for electric railways having an insulated section bridged by an auxiliary section, a second supply-conductor extending at an angle to said first-named conductor, and a casting having arms extending in the direction of the crossing conductors and fastened thereto, one of said arms having a narrow groove at each side of the other arm to receive the flanges of a trolley-wheel.

2. An overhead supply-conductor for electric railways having a section insulated from the main portion, an auxiliary section bridging said insulated section, a second supply-conductor crossing said insulated section and a casting having guiding-arms respectively fastened to said insulated section and to the conductor crossing the same.

In testimony whereof we have hereunto subscribed our names this 5th day of June, A. D. 1896.

CHARLES A. TERRY.

HARRY P. DAVIS.

Witnesses as to signature of Charles A. Terry:

LORENZO C. CARUANA,

E. H. BRUSH.

Witnesses as to signature of Harry P. Davis:

WESLEY G. CARR,

HUBERT C. TENER.