

No. 663,700.

Patented Dec. 11, 1900.

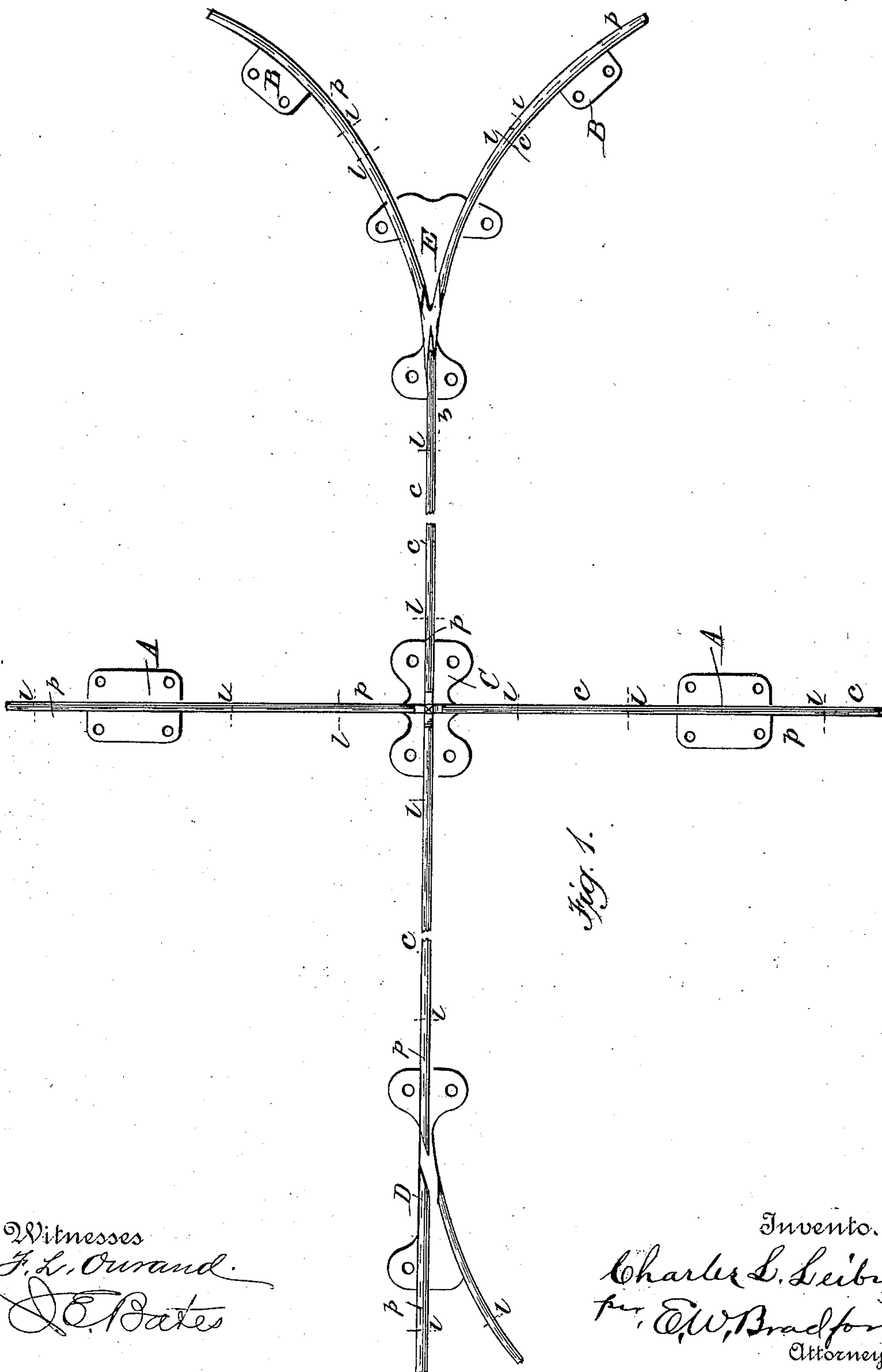
C. L. LEIBY.

OVERHEAD TROLLEY SYSTEM.

(Application filed Dec. 5, 1898. Renewed Oct. 18, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
F. L. Ourand.
J. E. Bates

Inventor.
Charles L. Leiby,
per E. W. Bradford,
Attorney

No. 663,700.

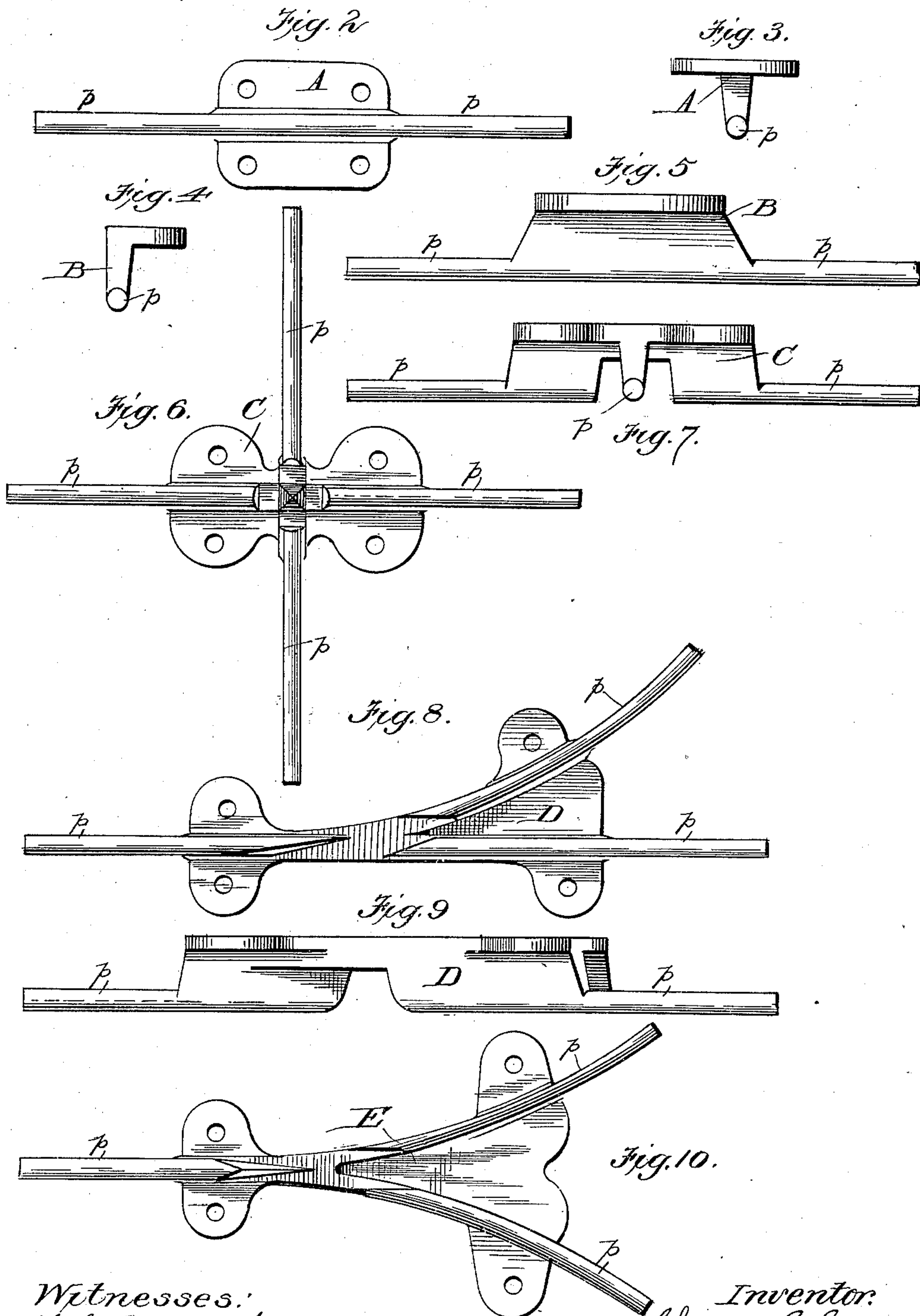
Patented Dec. 11, 1900.

C. L. LEIBY.
OVERHEAD TROLLEY SYSTEM.

(Application filed Dec. 5, 1898. Renewed Oct. 18, 1900.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:
F. L. Ourand.
O. E. Bates

Inventor:
Charles L. Leiby,
per O. E. Bates
his Attorney

UNITED STATES PATENT OFFICE.

CHARLES L. LEIBY, OF KNOXVILLE, TENNESSEE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE LEIBY COMPANY, OF SAME PLACE.

OVERHEAD-TROLLEY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 663,700, dated December 11, 1900.

Application filed December 5, 1898. Renewed October 18, 1900. Serial No. 33,513. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. LEIBY, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented certain new and useful Improvements in Overhead-Trolley Systems, of which the following is a specification.

My said invention consists in providing a continuous overhead conductor for trolley systems which will have no breaks or offsets or shoulders at the points of its juncture with the several switches, crossings, and supports, but will present a continuous smooth surface at these points, resulting in a conductor extending from end to end of the system, if desired, without a break, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar letters of reference indicate similar parts, Figure 1 is a diagrammatic view of the underside of an overhead-trolley system made in accordance with my said invention; Fig. 2, an under side plan view of one of the hangers by which the trolley wire or conductor is hung from the cross-arms of the poles; Fig. 3, an end elevation of the same; Fig. 4, an end elevation of one of the connections for supporting the trolley-wires at the curves by means of guys running therefrom to poles or supports at one side; Fig. 5, a side elevation of the same; Fig. 6, an under side plan view of the four-way switch; Fig. 7, a side elevation of the same; Fig. 8, an under side plan view of the two-way switch; Fig. 9, a side elevation of the same, and Fig. 10 an under side view of another two-way switch.

In said drawings the portions marked A represent the hanger by which the trolley-wires are suspended from the poles; B, the connection or hanger joined to the trolley-wires at intervals in the curves and connected by guy-wires to suitably-located supports; C, the four-way switch used at crossings and supported by guy-wires, as is usual; D, a two-way switch used at a point where one line runs off on a curve from a straight line and supported in the same manner, and E the two-way switch used where a curve runs off each side of a straight line, supported as the others.

In Fig. 1 the location of each of these parts and their use in the system is indicated and will be readily understood by an inspection of said view. In their form they do not differ materially from forms before known, being provided with the necessary flanges, with eyes for connection with the guy-wires or other supports, and with the ribs, which constitute in this case a continuation of the trolley-wire, arranged so that the trolley will follow the direction of the car as it moves over the track beneath. Heretofore, however, said trolley-wires have been connected to said parts by means of apertures, through which they are inserted and joined to suitable devices on the top side thereof or pass over the top thereof. In my present system each of these several supporting parts has short projections *p* cast thereon, being a continuation of the ribs and of a form and size corresponding nearly to that of the trolley wire or conductor *c*. To these projections I weld said trolley-wires, at points indicated by a dotted line *l*, across the conductor at each joint, the joint thus made being smooth, and thus providing a smooth surface for the trolley to run upon.

In the case of the supports B the projections *p* can be curved to give the conductor the curve desired and a much more regular curvature secured than by the usual devices for supporting the wires at such points.

As is well known, copper wire is usually used for trolley-conductors, and I also cast the supports A, B, C, D, and E from copper. To render said copper parts weldable, I subject them to a treatment which consists in placing them in a vessel with a quantity of a compound containing potassium nitrate and a cyanid in the proportion of about one pound of the potassium nitrate to ten grains of the cyanid and heating said vessel until said compound becomes fused and allowing the copper to stand in the bath until the desired chemical action has taken place, usually two or three hours, or the copper may be treated in a molten state by throwing therein a proper quantity of the compound in proper proportions and then cast and rolled to the forms desired. Copper so treated can be welded by the usual method.

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

1. An overhead system of trolley-conduc-
5 tors consisting of the usual trolley-wires and metal supports, said metal supports being formed with points to which said wires may be welded, and said wires having their ends welded thereto, whereby a smooth joint and a
10 continuous conductor are secured, substantially as set forth.

2. A trolley system of conductors, compris-

ing the usual trolley-wires and various supports, said supports being cast with ribs and solid projections, *p*, in the form of the trolley- 15 wires, and said trolley-wires welded thereto, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Washington, District of Columbia, this 3d day of December, A. D. 1898. 20

CHARLES L. LEIBY. [L. S.]

Witnesses:

CHARLES T. CATES, Jr.

E. W. BRADFORD.