No. 667,571. Patented Feb. 5, 1901.

J. W. PERRY.

TROLLEY WIRE CROSSING.

(Application filed May 10, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

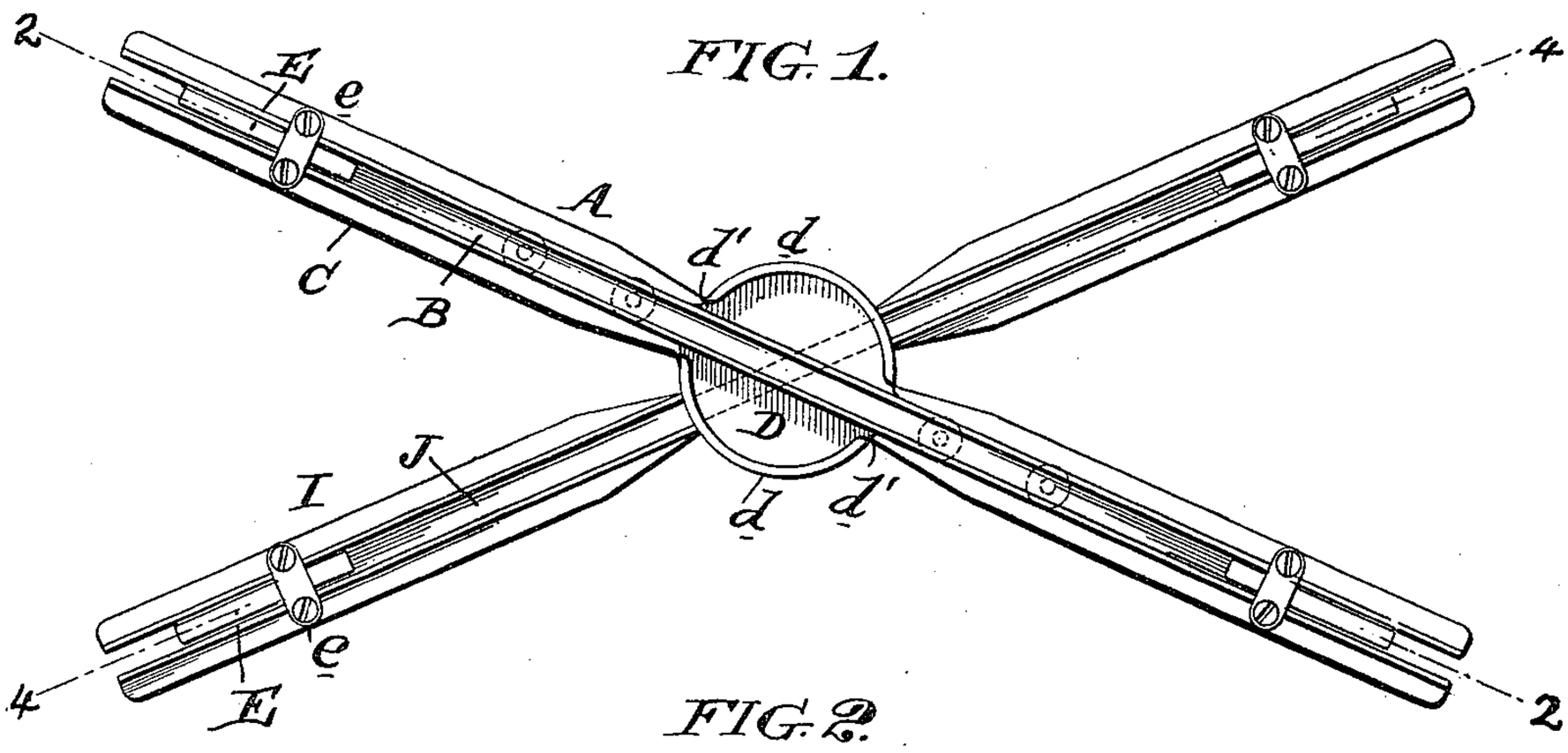

FIG. 2.

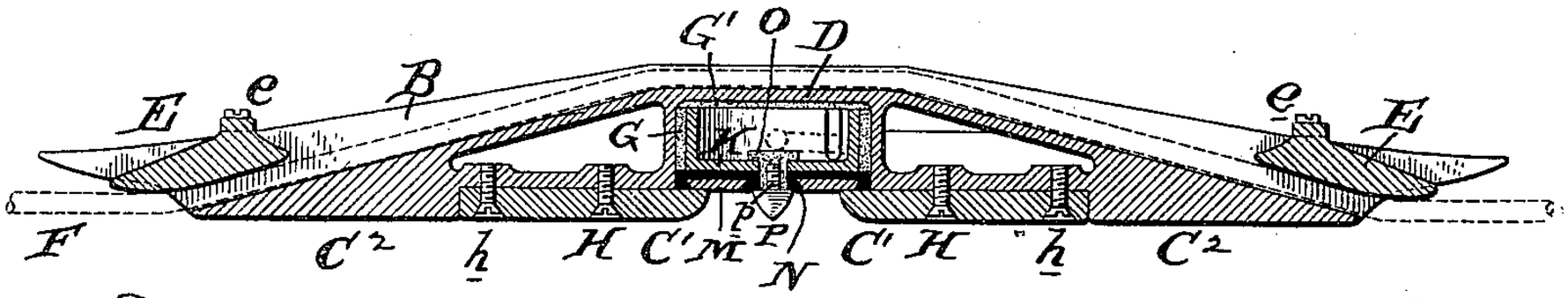

FIG. 3.

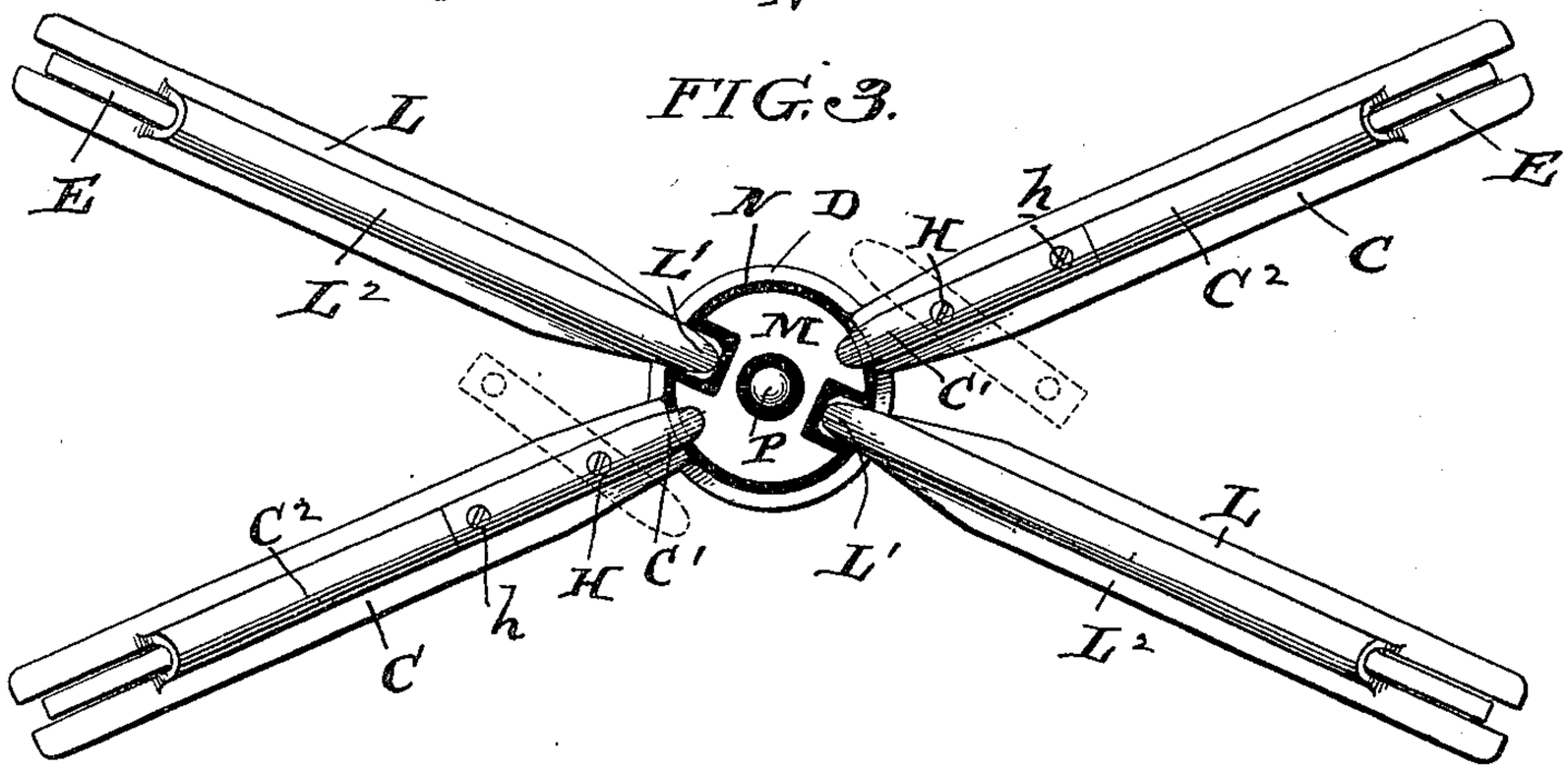

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FIG. 4.

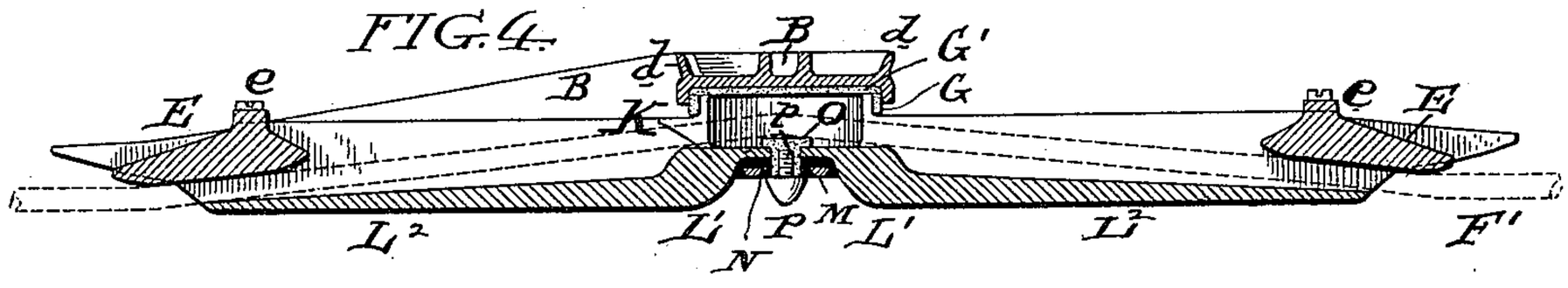
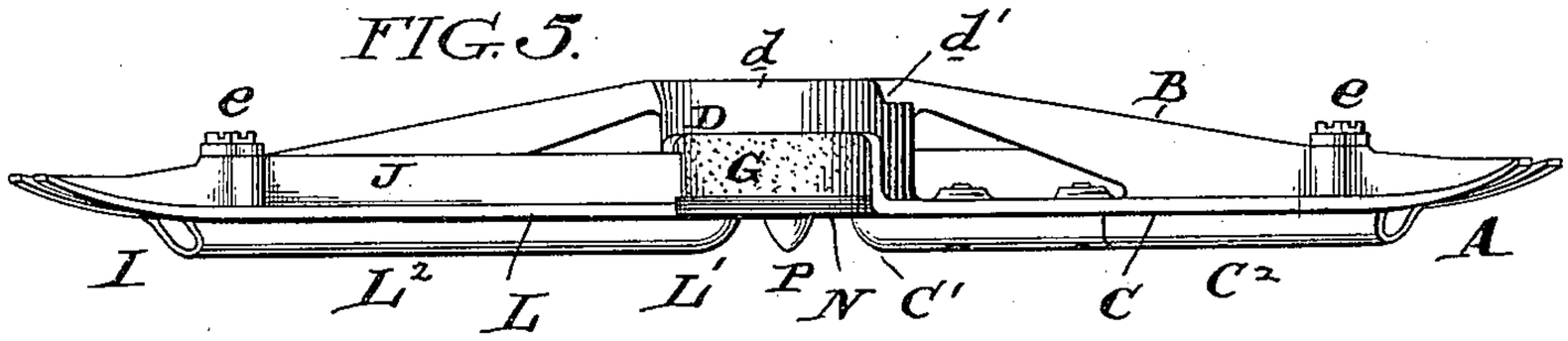


FIG. 5.



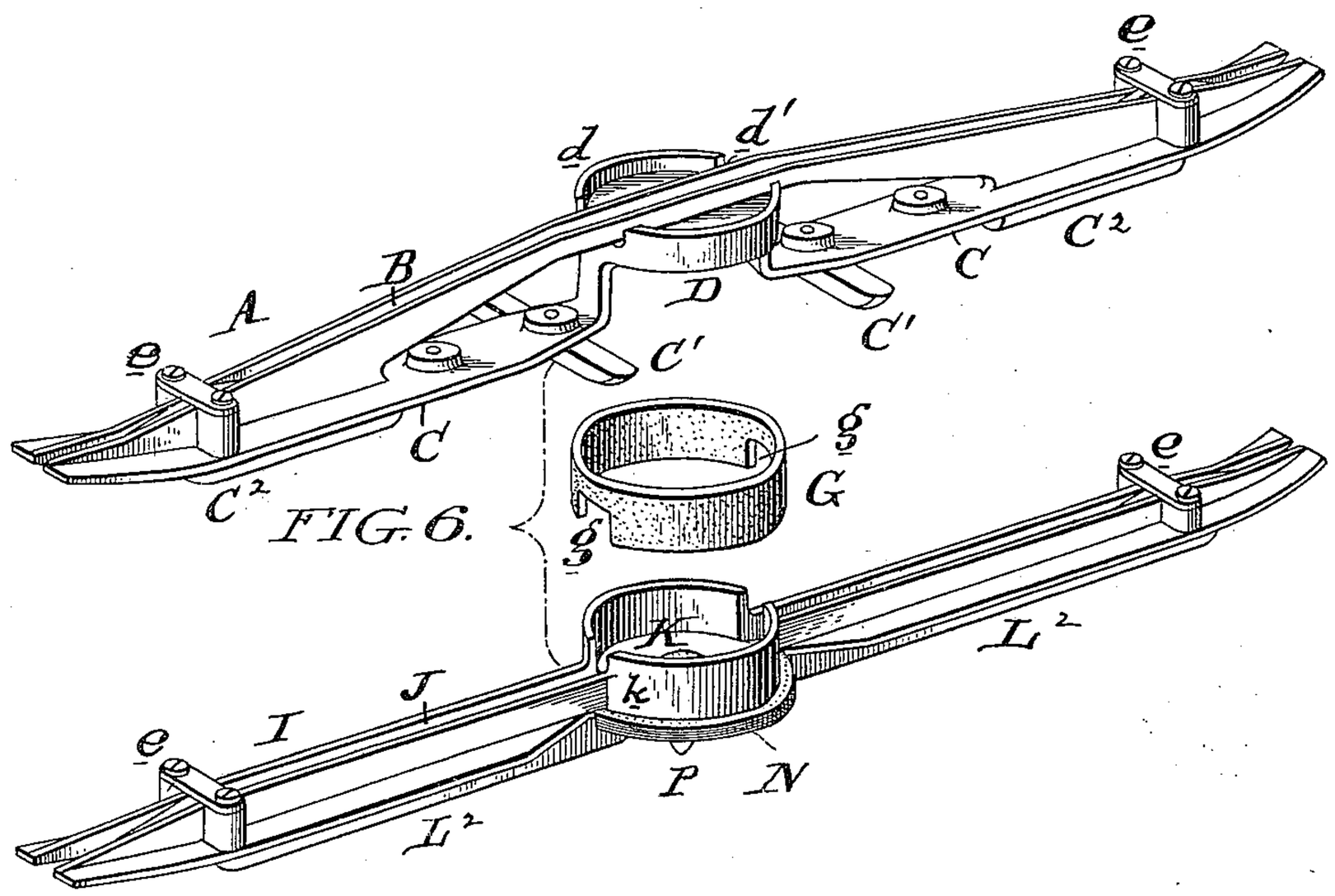


FIG. 6.

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JAMES W. PERRY, OF PHILADELPHIA, PENNSYLVANIA.

TROLLEY-WIRE CROSSING.

SPECIFICATION forming part of Letters Patent No. 667,571, dated February 5, 1901.

Application filed May 10, 1900. Serial No. 16,133. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. PERRY, of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Trolley-Wire Crossings for Electric Railways, of which the following is a specification.

My invention has reference to trolley-wire crossings for electric railways; and it consists of certain improvements set forth in the following specification and shown in the accompanying drawings, which form a part thereof.

My invention comprehends certain features of construction of crossings for trolley-wires of electric railways in which simplicity and cheapness of construction are combined with strength and adjustable qualities.

In carrying out my invention I make the crossing of suitable parts, which are crossed, pivoted at the middle, and insulated from each other, the terminal parts being adapted for connection with the trolley-wires, whereby the moving trolley may run from wire to wire over the crossing. The two main guiding parts are insulated from each other, so that the trolley-wire connecting with the end of one of the said crossing parts may be supplied with electric energy from a different source from that which supplies the current to the wire connecting with the other of said crossing parts, to avoid leakage of large amounts of current from the trolley-wire of one road to the trolley-wire of the other.

My improvements comprehend details of construction which will be better understood by reference to the drawings, in which—

Figure 1 is a plan view of my improved trolley-crossing. Fig. 2 is a longitudinal section of same on line 2 2 of Fig. 1. Fig. 3 is an inverted plan view of same. Fig. 4 is a sectional elevation on line 4 4 of Fig. 1. Fig. 5 is a side elevation of my improved crossing, and Fig. 6 is a perspective view of the several parts of my improved crossing separated.

A is one of the main parts of the crossing, and I is the other, these two parts being pivoted in the middle in a manner to be later described. The part A comprises a central recessed portion or socket D, circular in plan and having opposite sides provided with rail portions C^2, having guide-flanges C for the trolley-wheel. Its upper part is connected with the guide-flanges by a curved channel structure B. The trolley-wire F extends through this channel B and is held at each end by the retaining-plates E (secured in position by screws *e*) in alinement with the central guide-rails C^2, which extend by adjustable parts C′ somewhat over the central portion D. These adjustable rails C′ are pivoted by screws H to the main casting, and additional screws *h* are employed to clamp them in permanent operative position. The other main part of the crossing comprises the casting I, having at the middle a circular table K, which has extending from it the flanges L, acting as guides for the trolley-wheel and which have formed on their under sides the central guide-rails L^2, extended, as at L′, the inner ends thereof projecting somewhat over the table K. Upon this table K is a circular disk N, of insulating material, in which is suitably embedded or secured an annular insulated plate M. The insulation N is so formed that it will insulate the plate from the ends L′ of the rails L^2 of the part I. The insulating-disk N is firmly attached to the table K by a socket-bolt O, of insulating material, passed through the parts K N, and held in position by the brass screw *p*, having an enlarged conical head P. The laterally-extending flanges L are provided on their upper parts with grooved parts J, in which the trolley-wire F′ is received and held by similar clamps E, as before described.

G is a circular-shaped insulating part or ring and fits into the circular part or socket D of the main part A. Its downwardly-extending edge is notched or slotted at *g*, so as to straddle the grooved upper parts J of the said main portion I of the crossing and trolley-wire F′. This insulating part G is sleeved upon the upwardly-extending flanges *k* of the table K and turns with it when adjusting the crossing. The lower edge of the part G rests upon the outer edge of the insulating-disk N. An insulating-washer G′ is interposed between the top of the part G and the inner part of the socket portion D to complete the insulation between the parts A and I. The two main parts A and I are held together by the adjustable guide-rails C′, fitting under the plate M of the lower part I. The lower adjustable main part I of the crossing, there-

fore, in effect rests upon the upper surface of the extending portion C′ of the guide-rails of the upper main portion A and is retained against lateral displacement by virtue of the fact that the upwardly-extending flanges *k* of the table K fit against the inner surface of the circular insulating part G, which in turn is received by the recessed circular portion D of the main part A. While this construction enables the two parts of the switch structure to be firmly held in proper position relatively one to the other and fully insulates them at all times, it nevertheless enables the ready adjustment of these two parts to suit street-railways crossing at right or any oblique angle.

The trolley-wheel in passing across the crossing will receive in its groove the elliptical or rounded head P of the bolt at the central portion of the switch, and this will prevent any possibility of the trolley-wheel shifting out of alinement between the time it leaves the guide-rails at one side of the crossing and arrives upon the guide-rail at the other side. While this projecting part P might be omitted, I nevertheless prefer to employ it, for the reasons above stated.

To prevent rain which may fall upon the crossing structure from short-circuiting the two conductors, I provide the upper outer rim of the circular portion D with upwardly-extending flanges *d*, which terminate a short distance at each end adjacent to the channel structure B, so as to form outlets *d′* for the water. In this manner the drippings are caused to take place in contact with the main part A alone and are guided clear of the structure of the part I.

It will be observed that by my improved construction the trolley-wires in both cases extend entirely across or through the crossing and are not cut or united to the ends of the crossing structure, as is so frequently done in crossing structures for trolley-railways. On account of this the structure is very strong, and, moreover, is readily applied to any two crossing wires with the smallest amount of manual labor.

While I prefer the construction shown, the minor details may be modified without departing from the principles of the invention.

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

1. In a trolley-wire crossing for electric railways, the combination of two main parts jointed and insulated from each other by a socket-joint adjustable on a vertical axis each of said parts being provided upon its under portion with conducting guide-rails extending near to but not crossing the pivot, and the rails of the part having the socket of the joint extending under the other part to adjustably lock the two parts together.

2. In a trolley-wire crossing for electric railways, the combination of two main parts insulated from each other and pivoted together at or about their middle portions and in which each of said parts is provided upon their under portion with conducting guide-rails extending near to but not crossing the pivot, and the inner ends of the said guide-rails of one part directly sustaining the other part and locking the two parts together, and further provided upon their upper portions one with a downwardly-extending tubular socket and the other with an upwardly-extending circular or curved portion fitting within and insulated from the socket whereby the two parts of the crossing are relatively adjustable and insulated.

3. In a trolley-wire crossing for electric railways, the combination of two parts pivoted together at the middle and respectively adapted to be connected to the trolley-wires of the two crossing railways, and each of said parts being provided with guide-rails upon their under surfaces, those of one of the parts being adjustable so as to turn horizontally into or out of alinement with the trolley-wire and acting to support the other part and adjustably lock the two parts together.

4. In a trolley-wire crossing for electric railways, the combination of two parts pivoted together at the middle by an insulated joint and respectively adapted to be connected to the trolley-wires of the two crossing railways and each of said parts being provided with guide-rails upon their under surfaces, those of one of the parts being adjustable about vertical pivots and acting to directly support the other part and lock the two parts together while maintaining their insulated independence.

5. In a trolley-wire crossing, the combination of a main part having a socket at its middle and adjustable guide-rails upon its under surface having their inner ends overlapping the socket portion, with a second main part having guide-rails upon its under surface and a central table and insulated plate fitted to the socket portion of the first-mentioned main part by an insulated joint and retained in position by the adjustable guide-rails upon which the insulated plate rests.

6. In a trolley-wire crossing, the combination of a main part having a socket at its middle and adjustable guide-rails upon its under surface having their inner ends overlapping the socket portion, with a second main part having guide-rails upon its under surface and a central table and insulated plate fitted to the socket portion of the first-mentioned main part by an insulated joint and retained in position by the adjustable guide-rails upon which the insulating-plate rests, and a central insulated guide-head P projecting downwardly from the insulated plate substantially in alinement with the two sets of guide-rails.

7. In a trolley-wire crossing, the main part A having a socket portion at its middle, in combination with the crossing main part I having a central circular portion provided with an upward projection fitting into the

socket of the main part A and also with fixed rails L′, L², insulating material within the socket portion for insulating the two main parts from each other, and adjustable guide-rails C′ upon the lower parts of the main part A and having their adjacent ends supported and projecting under and insulated from the circular portion of the crossing main part I for holding the socket-joint between the two main parts in operative and adjustable relation.

8. In a trolley-wire crossing, the main part A having a socket portion at its middle, in combination with the crossing main part I having a central circular portion provided with an upward projection fitting into the socket of the main part A and also with fixed rails L′, L², insulating material within the socket portion for insulating the two main parts from each other, adjustable guide-rails C′ upon the lower parts of the main part A and having their adjacent ends supported and projecting under and insulated from the circular portion of the crossing main part I for holding the socket-joint between the two main parts in operative and adjustable relation, and an insulated guide held to the under part of the circular portion of the main part I and directly resting upon the upper parts of the adjustable guide-rails of the main part A.

9. In a trolley-wire crossing, the main part A having the socket portion D at the middle and the upwardly-extending channel B for the trolley-wire, in combination with the main part I having the central table portion K, the guide-rails L² on the bottom and upwardly-extending grooved part J for the trolley-wire at the top, the central insulated plate M below the table, insulation N between the table K and plate M, an insulated joint between the socket portion D and the table portion K for connecting the two main parts, and adjustable rail-guides C′ on the under side of the part A upon the extended ends of which the plate M rests.

10. In a trolley-wire crossing, the main part A having the socket portion D at the middle and the upwardly-extending channel B for the trolley-wire, in combination with the main part I having the central table portion K, the guide-rails L² on the bottom and upwardly-extending grooved part J for the trolley-wire at the top, the central insulated plate M below the table, insulation N between the table K and plate M consisting of a washer G′ and ring G fitted into the socket D and receiving the table K and its flange, an insulated joint between the socket portion D and the table portion K for connecting the two main parts, and adjustable rail-guides C′ on the under side of the part A upon the extended ends of which the plate M rests.

11. In a trolley-wire crossing, the main part A having the socket portion D at the middle and the upwardly-extending channel B for the trolley-wire, in combination with the main part I having the central table portion K, the guide-rails L² on the bottom and upwardly-extending grooved part J for the trolley-wire at the top, the central insulated plate M below the table, insulation N between the table K and plate M, an insulated joint between the socket portion D and the table portion K for connecting the two main parts, the central insulated head P extending downward from the insulation N and table K, and adjustable rail-guides C′ on the under side of the part A upon the extended ends of which the plate M rests.

12. In a trolley-wire crossing, a main part A having a socket portion at the middle, in combination with a main portion I having a central table portion K fitted to and insulated from the socket portion, a disk of insulating material N secured to the table K, a metallic plate M insulated from the part I and carried by the insulating-disk N, and adjustable rails C′ on the part A extending over the plate M.

In testimony of which invention I have hereunto set my hand.

JAMES W. PERRY.

Witnesses:
DAVID W. HOFFMAN,
R. M. KELLY.