(No Model.)

H. GEISE.

TROLLEY WIRE CROSSING.

No. 511,419. Patented Dec. 26, 1893.

FIG. 1

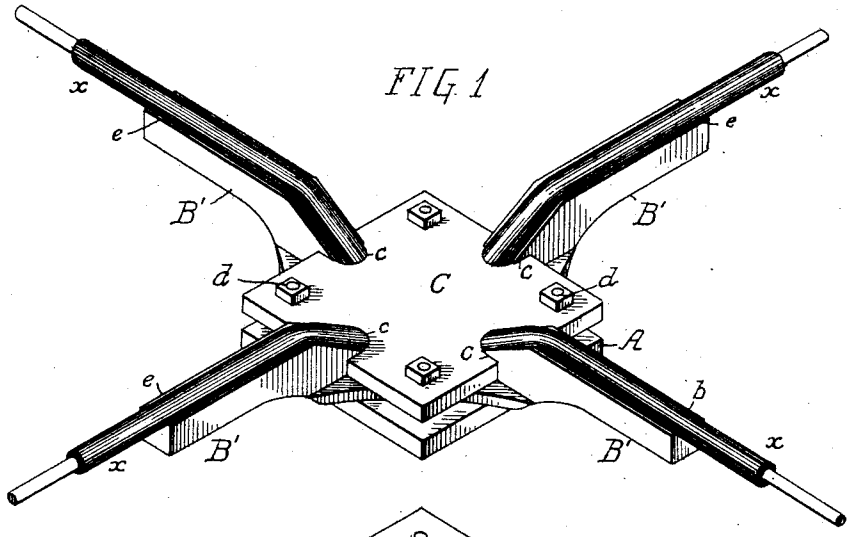


FIG. 2

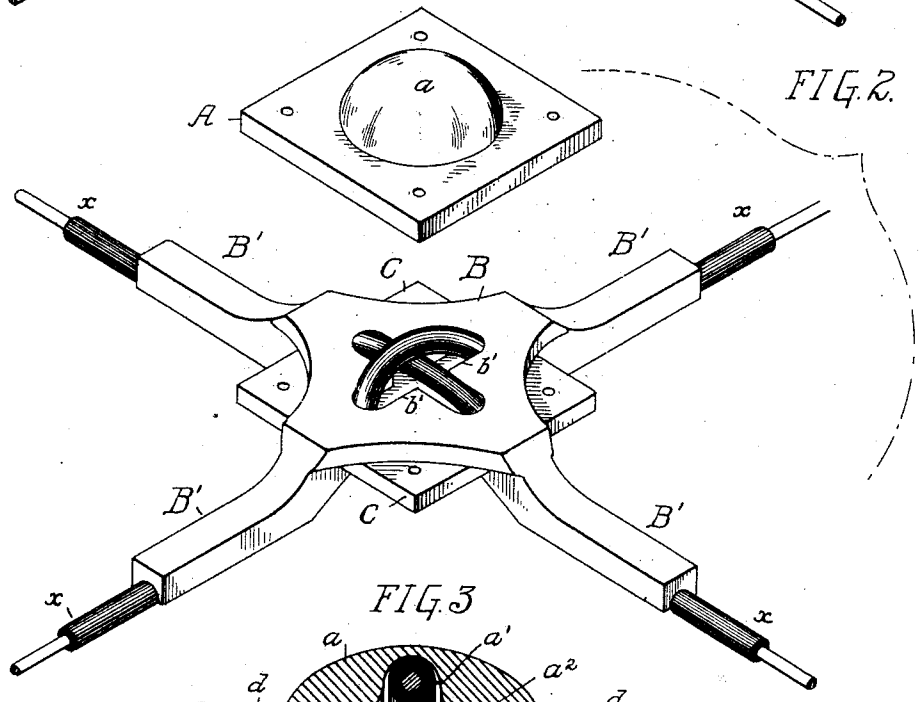
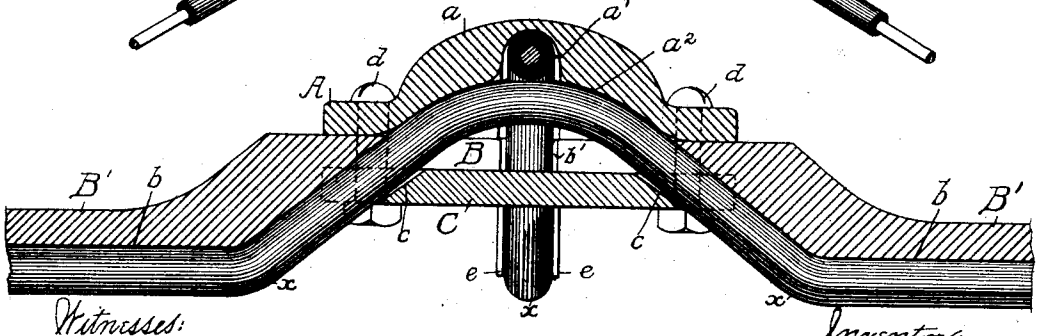


FIG. 3



Witnesses:
Jno. E. Parker
J. Henderson.

Inventor:
Henry Geise,
By his Attorney
Howard Petit.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY GEISE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO EDWIN JAQUETT SELLERS AND HORACE PETTIT, OF SAME PLACE.

TROLLEY-WIRE CROSSING.

SPECIFICATION forming part of Letters Patent No. 511,419, dated December 26, 1893.

Application filed June 26, 1893. Serial No. 478,782. (No model.)

To all whom it may concern:

Be it known that I, HENRY GEISE, of the city of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Trolley-Wire Crossings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention has relation to crossings for the conducting of "trolley" wires of electrical railways, and has for its object the construction of a crossing device by which the conducting wires are insulated from each other and from the crossing device and a travel plate common to the two lines is so situated as to be in the path of travel of the trolley wheels of each road.

Referring to the accompanying drawings, Figure 1 represents an inverted perspective view of the crossing device forming the subject of my invention. Fig. 2 is a perspective view of the same with the top plate removed, and Fig. 3 is a transverse sectional elevation through the center of the same.

In carrying my invention into effect I first insulate each conducting wire at the point of intersection, the insulation extending for some distance beyond the grooved guiding arms of the crossing device as indicated at *x*—*x* in the various figures.

The crossing device comprises essentially three sections, A, B, and C; the portion, B, being provided with a series of radiating arms, B′, extending for some distance beyond the edges of the plate and grooved at *b* for the reception of the insulated portions of the conducting wires, the grooved portions of the arms being on a plane somewhat lower than the main body of the portion, B, and where the arms merge into the main body, the grooves incline upwardly and the wires are conducted through openings, *b*′, formed in the center of the section, B, and intersecting each other at an angle corresponding to the angle or crossing of the two roads. The conducting wires extending through these openings, *b*′, cross each other above the level of the portion, B, as shown more clearly in Figs. 2 and 3 and are covered by the section, A, the latter having a dome-shaped central portion, *a*, the inner face of which is provided with grooves, *a*′, *a*², forming guiding channels for the wires. The lower section, C, which forms the travel plate for the trolley wheels, has its opposite edges centrally recessed at *c*, and into these recesses fit the inner ends of the grooved arms, B′, and the conducting wires are guided through the recesses and from thence through the slotted openings, *b*′, and from thence to the guiding slots in the dome, *a*. The three sections are held together by a series of bolts, *d*, extending through openings formed in the sections, A and C, and the section, B, is thus firmly clamped between the sections A and C and the conducting wires held in place without danger of working loose during the crossing of the trolley wheels.

With a device of this character the trolley wheel after leaving the conducting wire has a smooth flat surface upon which to travel and as the grooved arms are on a higher level than the wires, the trolley wheels will travel practically on the same level in crossing, as it does when in contact with the wire, as the bottom of the groove of the trolley wheel is in contact with the wire and the periphery of the opposite flanges of the wheel travel upon the plate, C.

In order to prevent the wearing away of the insulation and the danger which might result from short circuiting, the grooves *b*, of the arms, B′, are preferably of such depth that the insulated portions, *a*, of the conducting wires will be inclosed within the groove to such an extent that the trolley wheel will travel upon the opposite flanges, *e*, of each arm rather than in contact with the insulating material, *x*.

If desired the travel plate, C, may be formed of insulating material, or may be insulated from the other sections, or all of the sections may be made of insulating material or insulated from each other but this is not considered necessary as the insulated parts of the wire are not exposed to wear and being perfectly inclosed at the point of intersection are fully protected from accidental injury or deterioration due to exposure to the weather.

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

1. A crossing device comprising, in combination, conducting wires insulated at the point of intersection and crossing each other at a point above the normal level of the wires, and a travel plate provided below the point of crossing and upon which the trolley wheels of both lines are adapted to travel, substantially as specified.

2. A crossing device comprising, in combination, conducting wires insulated at the point of intersection and crossing each other at a point above the normal level of the wires, and a travel plate also located above the normal level of the conducting wires, and upon which the flanges of the trolley wheels of both lines are adapted to travel, substantially as specified.

3. A crossing device comprising, in combination, the conducting wires insulated at the point of intersection, a plate, as B, grooved arms extending therefrom and adapted to support and guide the wires, and a travel plate provided below the plate, B, having its lower surface on a plane above the normal level of the conducting wires, substantially as specified.

4. The combination of the conducting wires insulated at the point of intersection, a plate, as B, having central slotted openings, *b*, grooved guiding arms, B′, extending from said plate, a covering plate, as A, and a travel plate, as C, provided respectively above and below the plate, B, and between which said plate, B, is secured, substantially as specified.

5. The combination of the conducting wires, insulated at the point of intersection, a plate, as B, grooved guiding arms, B′, extending therefrom, such grooves being of sufficient depth to receive the insulated portions of the conducting wires, flanges *e*, extending along the opposite edges of each arm to form said grooves, and upon which the trolley wheel is adapted to bear, and a travel plate, as C, having its lower surface on a plane above the normal level of the wires, and upon which the trolley wheels of both lines are adapted to travel, substantially as specified.

6. The combination of the conducting wires, insulated as at X, a plate, B, having central slotted openings, *b*′, grooved guiding arms, B′, extending radially from the edges of such plate, B, a plate, A, having an internally grooved dome, *a*, a travel plate, C, and devices for securing the plates together, substantially as specified.

7. The combination of the conducting wires insulated at X, the plate, B, having openings, *b*′, through which the wires extend, grooved guiding arms, B′, extending from said plate, B, a plate, A, a dome, *a*, thereon having guiding grooves, *a*′, *a*², for the wires, a travel plate C, and bolts, *d*, adapted to secure such plates together, substantially as specified.

In witness whereof I have hereunto set my hand this 22d day of June, A. D. 1893.

HENRY GEISE.

Witnesses:
H. GORDON MCCOUCH,
HORACE PETTIT.