No. 796,501. PATENTED AUG. 8, 1905.

G. L. COURTENAY.

CONDUCTOR RAIL HOLDER FOR ELECTRIC RAILWAYS.

APPLICATION FILED FEB. 14, 1905.

FIG. 1.

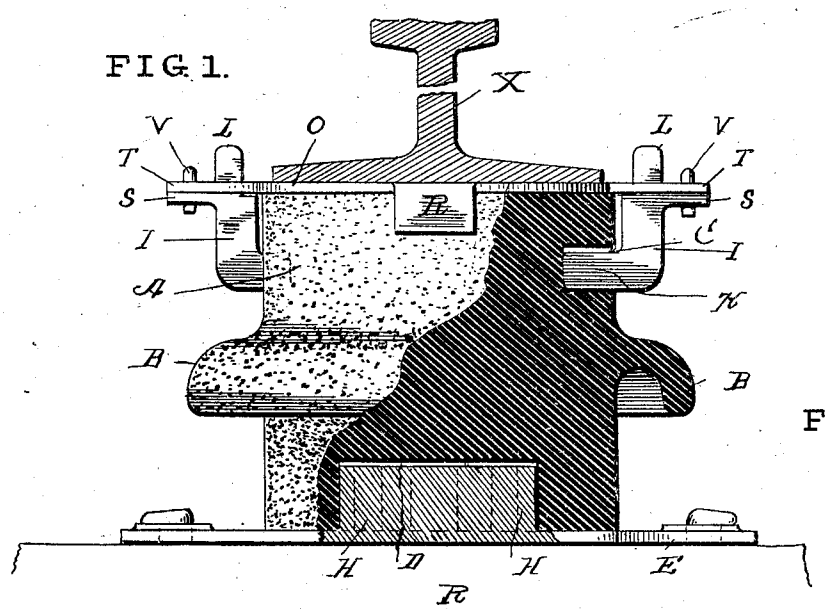


FIG. 4.

FIG. 5.

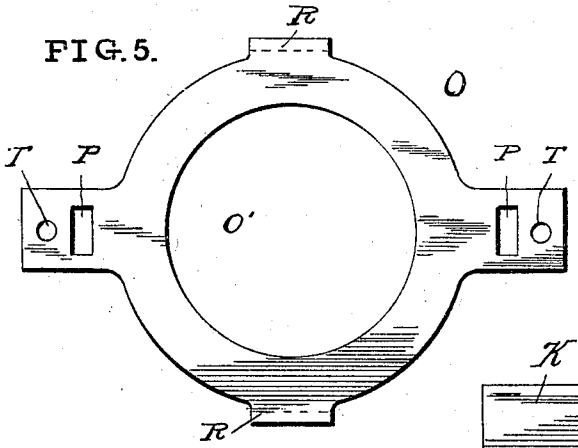


FIG. 3.

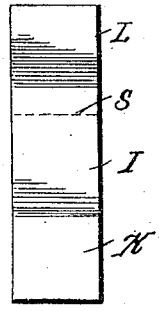
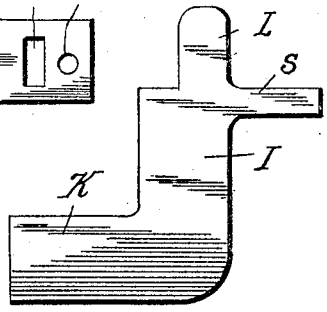


FIG. 2.



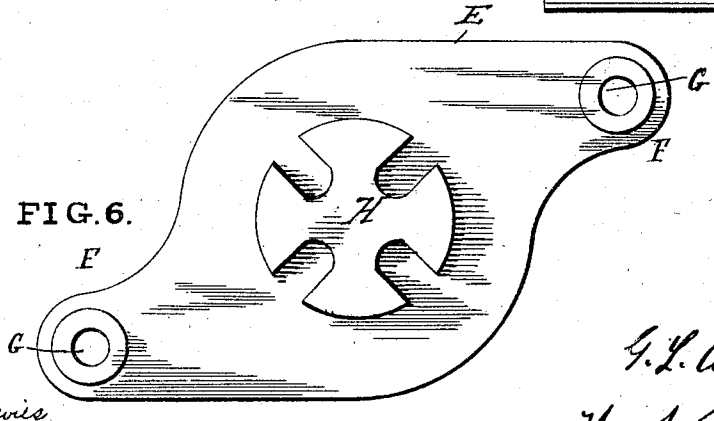


FIG. 6.

Witnesses
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CONDUCTOR-RAIL HOLDER FOR ELECTRIC RAILWAYS.

No. 796,501. Specification of Letters Patent. Patented Aug. 8, 1905.

Application filed February 14, 1905. Serial No. 245,613.

To all whom it may concern:

Be it known that I, GEORGE L. COURTENAY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Conductor-Rail Holders for Electric Railways, of which the following is a specification.

This invention relates to conductor-rail holders for third-rail railways.

The object of the invention is to produce an insulator and rail-holder which can be held firmly to the ties of a rail-track with less injury to the ties than is usual, to secure the insulator to the tie-plate with sufficient security without strain on the insulator, to improve the construction of rail-clips and means for holding them to the insulator, and generally to improve the elements and combination of a third-rail or conductor holder.

Figure 1 is an elevation, partly in section, of an insulator with its holding-plate as applied to a railway-tie, showing also the rail-clips and binder with part of rail. Fig. 2 is a side elevation of a rail-clip, and Fig. 3 is a face view thereof. Fig. 4 is an elevation of a holding-key. Fig. 5 is a plan of the clip-binder. Fig. 6 is a plan of holding-plate.

The insulator A is of any suitable and usual material, as glass, porcelain, artificial granite, &c. It is usually a short cylinder having an overhang or drip ring B and recesses C in opposite sides to receive the lugs of the rail-clips. A recess D in the base of the insulator receives the securing-plug of the tie-plate, and a quantity of cement or adhesive material holds the insulator to the tie-plate.

E indicates the tie-plate, which is of metal cast or struck up. The tie-plate has lateral wings F F, which project from the ends of the plate, and these wings have holes G therein. The tie-plates may be thickened around the holes G and spikes or bolts pass through the holes to hold the tie-plates to the tie. As the wings are not central, but project from opposite corners of the tie-plate, the securing devices have less tendency to split the tie when properly arranged thereon than if the wings were in line with each other.

The holding-plug of the tie-plate consists of a central plug having a number of fins or projections H H, which form segments of a cylinder or frustum of a cone and project upward into the hole D in the insulator. When cement is filled into the hole D in the insulator, it is thereby held firmly to the plug H H of the tie-plate.

The recesses C C in the opposite sides of the insulator are to receive the lugs K of the rail-clips I. These clips may be of cast metal or may be forged or stamped and are similar in construction. Two of the clips are applied to the insulator with their lugs K in the recesses C and with arms L projecting upward. A binder O is then applied to the clips and insulator, the arms L of the clips passing through holes or mortises P in the binder.

The binder O is a generally flat plate having, preferably, a central opening O′, as shown in Fig. 5, and having lugs R R extending down at the sides of the insulator at about right angles to the clip I when the parts are assembled. When the binders drop over the arms L of clips I, they hold the clips tightly to the insulator, and the clips in turn hold the binder against any movement but an upward movement. The arms L fit neatly but not too tightly in the mortises P of the binder.

A floor-piece S preferably projects from clip I under the outer end of the binder, and this floor-piece has a vertical hole directly under a hole T in the binder. A spring key or cotter V may be passed through one of these holes in the binder and the corresponding hole in the clip, and the parts are thus more firmly secured than if the keys V be omitted.

The third rail X may be of any usual form. It is not clamped to the insulator, but rests on the binder O, and by its weight holds all the parts together. The small lateral movement permitted to the rail is not material, as there is little lateral strain on the conductor-rails except sometimes at curves, and it is found better to permit a slight freedom than to hold the rails too firmly.

What I claim is—

1. The combination with an insulator for third rails having recesses in opposite sides, of a pair of rail-clips entering said recesses and projecting upward, and a binder having holes near its ends, extending across the top of the insulator and surrounding the upper ends of the clips.

2. The combination with an insulator for third rails having recesses in opposite sides, of a pair of rail-clips having lugs in said recesses and upwardly-extending arms, a

binder extending across the top of the insulator and having vertical holes through which the upwardly-extending arms of the clips pass, said binder having lugs extending down alongside the insulator.

3. The combination with an insulator for third rails having recesses therein, of a pair of rail-clips extending into said recesses, a binder extending across the top of the insulator and having holes through which upwardly-extending arms of the clip project, and means for locking the clips to the binder.

4. The combination with an insulator for third rails, of a clip interlocking with the said insulator, a binder embracing the clip and extending under the track-rail, and means for connecting the binder to the insulator under the track-rail.

5. The combination with an insulator for third rails having side recesses, of a pair of clips extending into said recesses and each provided with an upwardly-projecting arm, a binder-plate extending across the top of the insulator and having holes through which said clip-arms extend, and a rail resting on said binder-plate.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE L. COURTENAY.

Witnesses:

J. L. M. GRANT,

F. G. LESLIE.