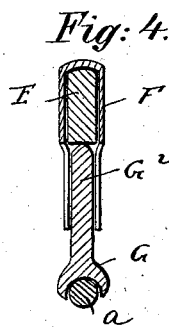
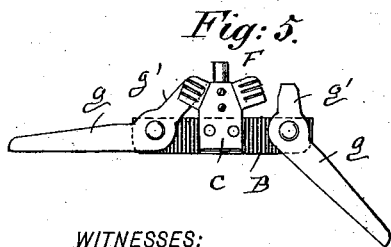
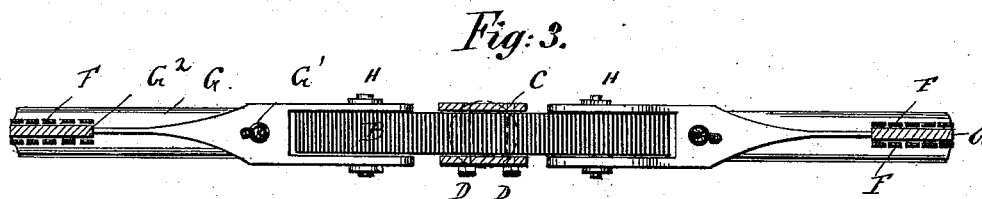
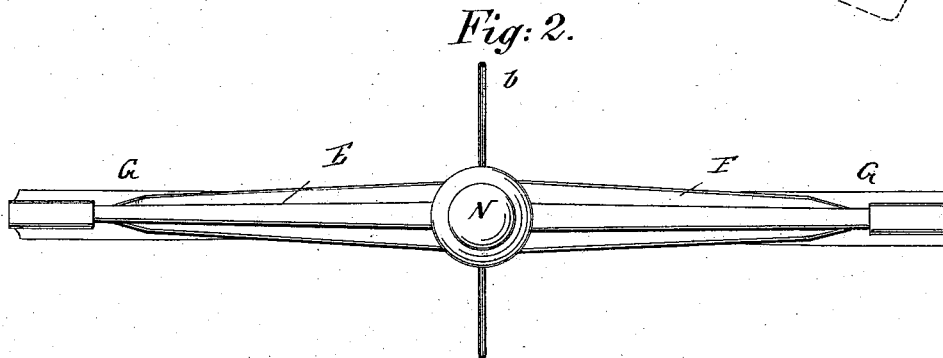
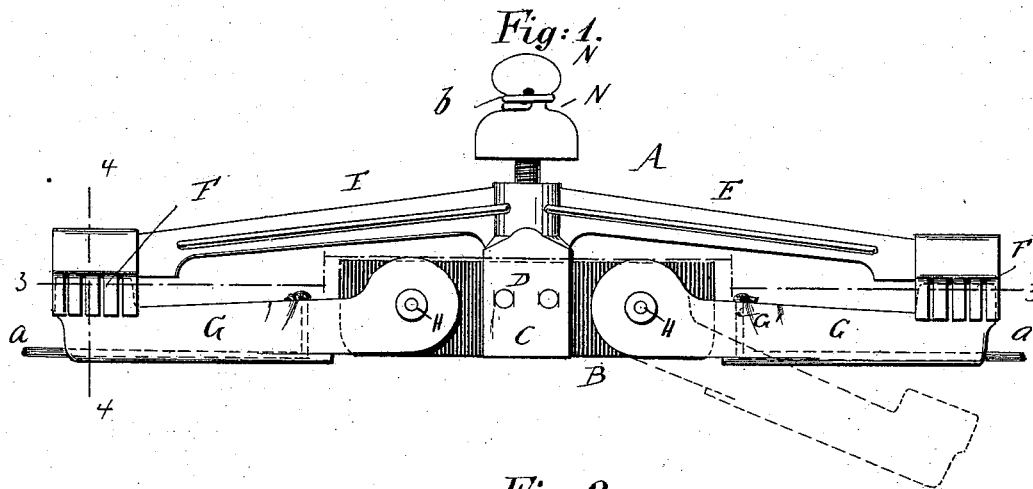


R. SCHEFBAUER.

COMBINED HANGER AND AUTOMATIC SWITCH FOR TROLLEY WIRES.

No. 522,621.

Patented July 10, 1894.

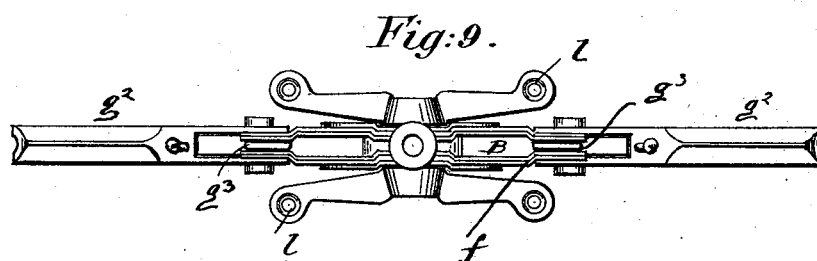
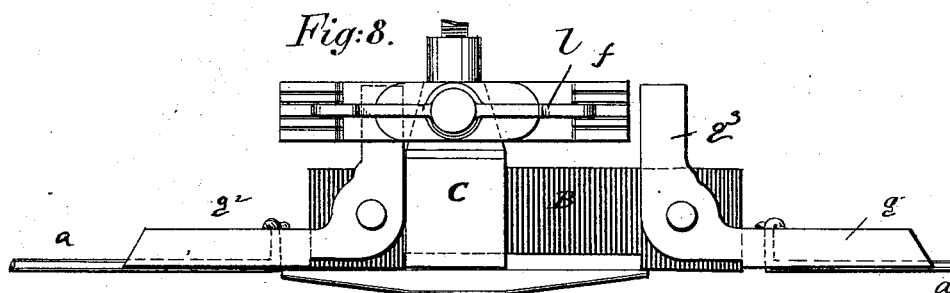
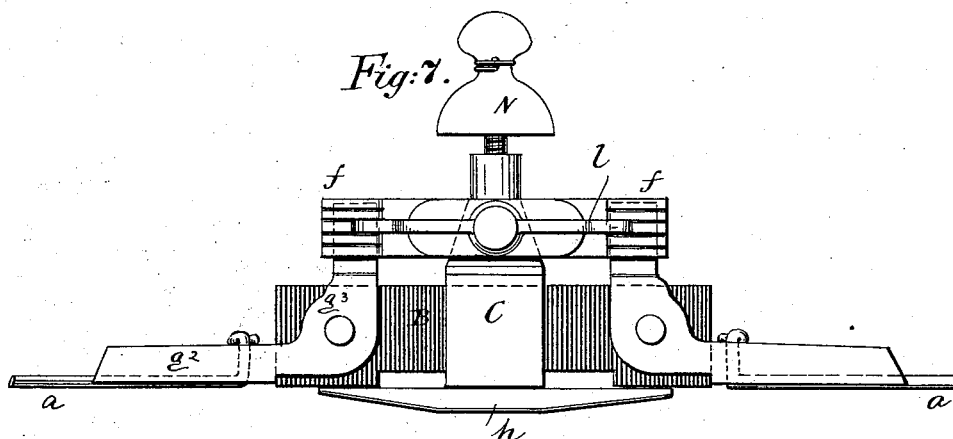
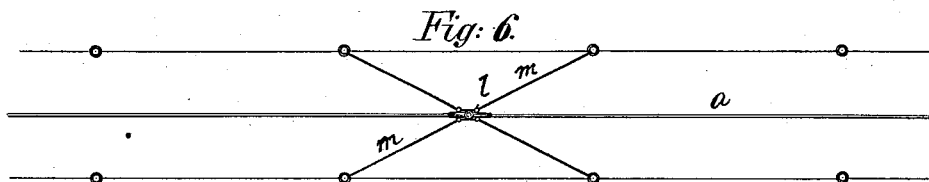


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COMBINED HANGER AND AUTOMATIC SWITCH FOR TROLLEY WIRES.
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UNITED STATES PATENT OFFICE.

RUPERT SCHEFBAUER, OF PATERSON, NEW JERSEY.

COMBINED HANGER AND AUTOMATIC SWITCH FOR TROLLEY-WIRES.

SPECIFICATION forming part of Letters Patent No. 522,621, dated July 10, 1894.

Application filed July 15, 1893. Serial No. 480,572. (No model.)

To all whom it may concern:

Be it known that I, RUPERT SCHEFBAUER, a citizen of the United States, residing at Paterson, Passaic county, New Jersey, have invented certain new and useful Improvements in a Combined Hanger and Automatic Switch for Trolley-Wires, of which the following is a specification.

The object of my invention is to provide a new and improved combined support and switch for the trolley wires of electric railways, which is so constructed that whenever the trolley-wire breaks the current is immediately switched off from the broken part of the wire.

In the accompanying drawings, Figure 1 is a side-view of my improved combined hanger and automatic cut out for trolley-wires. Fig. 2 is a plan-view of the same. Fig. 3 is a horizontal sectional view on the line 3 3, Fig. 1. Fig. 4 is a transverse sectional vertical view on the line 4 4, Fig. 1. Fig. 5 is a side-view of a modified construction. Fig. 6 is a plan-view of part of the line. Fig. 7 is a side-view of a modified construction of my improved hanger and cut out, closed. Fig. 8 is a similar view showing the same open, and Fig. 9 is a plan-view of the same.

Similar letters of reference indicate corresponding parts.

The trolley-wire *a* is suspended by means of a series of my improved hangers A from wires *b* extending transversely across the street and fastened to poles in the usual manner.

My improved support and switch is constructed with a body-piece B of vulcanized fiber or other suitable insulating material, which has its lower corners rounded off, as shown by the dotted lines. A U-shaped cap-piece C is placed on the top of the block B and is fastened by means of two bolts D passed through said cap-piece and through the block B. From the top of the cap-piece C, two arms E project to ends of which the spring contact jaws F of copper are fastened, said jaws projecting downward.

Two switch levers G of brass are pivoted by the bolts H to the end-parts of the insulating block B, the pivoted ends of said levers being forked to receive the ends of the block B as shown. The switch-levers have an up-

wardly-projecting lug T² at the free end, to pass in between jaws F on the ends of the arms E and the bottom edges of the levers G are grooved to receive the trolley-wire *a* which is securely soldered to said lever, the end of the trolley wire *a* being passed up through an aperture G' of the switch-lever G, so that the adjacent ends of the trolley-wires are but a short distance from each other. As long as the trolley-wire remains intact the projecting lugs G² of the switch-levers G are in the position shown in full lines in Fig. 2, that is, they are between the copper jaws F, and thus the trolley-wire is in metallic connection by means of said copper jaws and arms E with the cap-piece C. On the top of the cap-piece C a button N is screwed, that is provided with a groove N', around which one of the wires *b* is passed, for the purpose of supporting the hanger A from said wire *b*.

Whenever a trolley-wire breaks the weight of the broken end of the trolley-wire swings the switch-levers G into the position shown in dotted lines in Fig. 1, whereby the contact between the switch-lever G and the jaws F is broken and no current can pass through the broken parts of the wire. It is immaterial how long the broken end of the wire is connected with a switch-lever G, for in case a trolley-wire breaks the two adjacent switch-levers G on two adjacent poles swing down and the circuit is broken.

When a fresh trolley-wire is secured in place the levers G are again swung up the copper jaws on the arms E and the circuit of the trolley-wires is completed through the support A as follows: from one trolley-wire *a* through the corresponding switch-lever G, the copper jaws F, arms E, the other jaws F, the other switch-lever G and the other trolley-wire *a*.

In the construction shown in Fig. 5, the switch-levers *g* have arms *g'* which can pass in between the upper jaws, which in this case project directly from the piece C. A hanger, such as described is to be used on each cross or suspension wire, or on each bracket arm, in case the wire is suspended from bracket arms.

In the construction shown in Figs. 7 to 9, the block B of insulating material is mounted

to slide in the head C and the levers g^2 are bolted to the ends of block B and provided with upwardly projecting arms g^3 which can pass in between copper spring contact jaws f fastened to the top of the head C and projecting in opposite directions. The sliding block rests on fixed bottom arms h of the head C. The head C has arms l to which brace wires m are fastened for securely holding and supporting the head, as shown in Fig. 6, which wires m take the place of the wires b in the construction shown in Fig. 1. This hanger is arranged at about every tenth pole, so that there is considerable tension in the trolley-wire produced by the weight of the length of the same between any two hangers. This tension holds the parts in the position shown in Fig. 7 and the circuit is closed. If one trolley-wire, for example, the one at the left breaks the tension in the unbroken wire at the right draws the sliding block B to the right thereby disengaging the arm g^3 of the

right hand switch-lever g^2 from the jaws f whereby the circuit is broken.

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

In a trolley-wire support, the combination with a body of insulating material, of two levers attached to the same at opposite ends, to which levers the trolley-wires are directly fastened, a hanger from which the insulating body is suspended, and two sets of contact-jaws on said hanger, one set of jaws serving for each lever, and which jaws are in metallic connection with each other, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

RUPERT SCHEFBAUER.

Witnesses:

OSCAR F. GUNZ,

CHARLES SCHROEDER.