(No Model.)

W. VOGLER.

OVERHEAD ELECTRIC SYSTEM.

No. 423,004. Patented Mar. 11, 1890.

Fig. 1

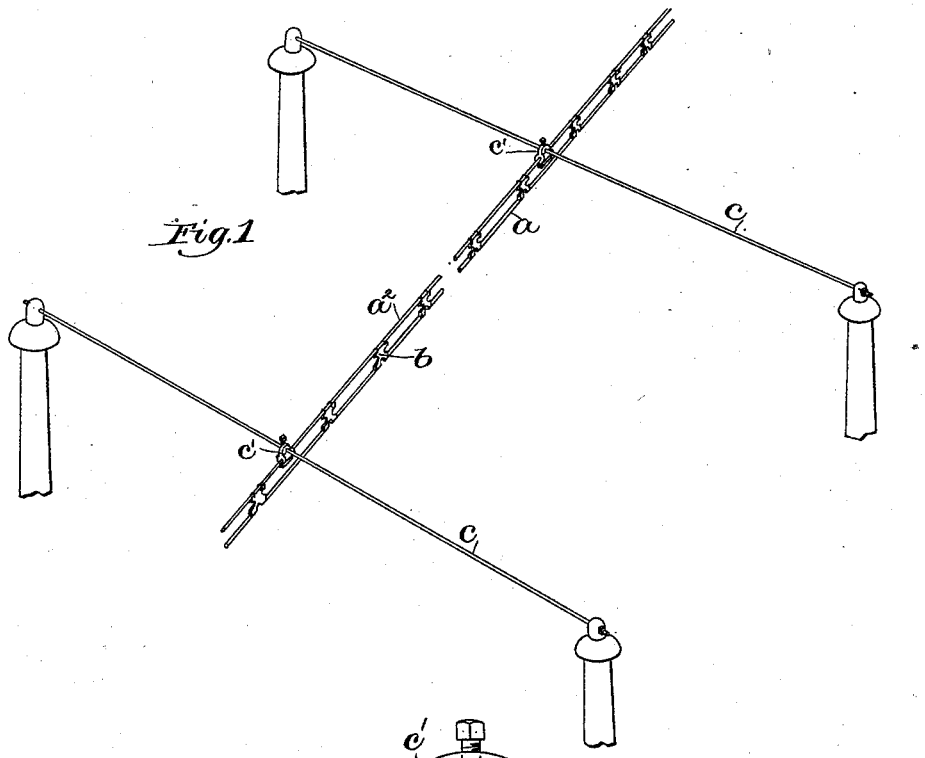
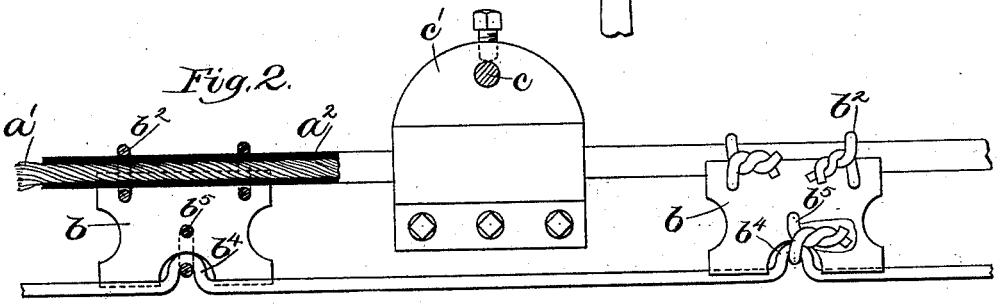


Fig. 2.



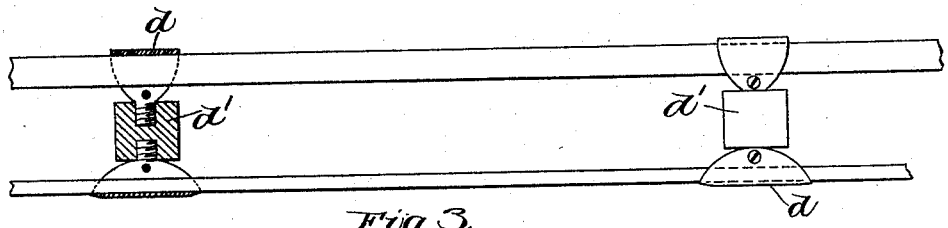


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM VOGLER, OF SOMERVILLE, MASSACHUSETTS.

OVERHEAD ELECTRIC SYSTEM.

SPECIFICATION forming part of Letters Patent No. 423,004, dated March 11, 1890.

Application filed December 3, 1889. Serial No. 332,430. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VOGLER, of Somerville, county of Middlesex, State of Massachusetts, have invented an Improvement in Overhead Electric Systems, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to electric-railway systems of that class known as the "overhead" system, in which the main conductor or trolley-wire is suspended above the car by insulators supported from a span-wire extended across the road-bed and secured at its opposite ends to suitable supports, usually posts. The trolley-wire, when strung along the railway, is drawn taut, and the trolley-wheel bears against the said wire with considerable force, so that in practice the said trolley-wire between two adjacent span-wires is subjected to substantially great pressure and strain. In practice it frequently happens that the trolley-wire becomes broken, owing, it may be, to the severe strain imposed upon it, and the said wire, falling to the ground, becomes a source of danger to life and property.

This invention has for its object to suspend the trolley-wire over the road-bed, so that the strain upon the same is diminished and the said wire prevented from coming in contact with the ground in case it should become broken, whereby the danger which besets the present method of suspending the trolley-wire is obviated or reduced to a minimum.

In accordance with my invention I employ a re-enforcing support for the trolley-wire, preferably an insulated cable of fine iron wires or strands, to which the trolley-wire is secured by means of insulators interposed between the said trolley-wire and re-enforcing wire, the latter being supported from the span-wires.

The particular features in which my invention consists will be pointed out in the claims at the end of this specification.

Figure 1 represents a sufficient portion of an overhead system to enable my invention to be understood; Fig. 2, a detail on an enlarged scale, to more clearly show my invention; and Fig. 3, a modification to be referred to.

The trolley-wire a, which may be of copper, as now commonly used, is suspended, in accordance with my invention, from a re-enforcing support, preferably a cable a' of fine wires or strands of iron enveloped by a suitable covering a^2 of insulation, by means of insulators b, secured to the said re-enforcing support. The insulators b may be of any desired kind or construction, they being shown in Figs. 1 and 2 as blocks of insulating material fastened to the re-enforcing cable or support by tie-wires b^2.

The trolley-wire a, as shown in Fig. 1, is crimped or bent upward at intervals, as at b^4, to enter a cavity in the under side of the insulator, and the said crimped portion is engaged by a tie-wire b^5, which is extended through the insulator, as shown, and twisted to secure the trolley-wire to the insulator.

The insulators, in practice, will preferably be placed substantially near each other—as, for instance, every six to eight or ten feet, or at any other distance, as may be determined by practice.

The re-enforcing cable is herein shown as suspended from the span-wires c by means of a clamp c', having a hole through which the span-wire is passed.

I do not desire to limit my invention to the particular manner shown for insulating the trolley-wire from the re-enforcing wire or cable, as it may be insulated in any desired or well-known manner—such, for instance, as shown in Fig. 3, wherein the re-enforcing wire and the trolley-wire are embraced by clamps or shoes d, secured to an interposed block d' of insulation.

I claim—

1. The combination, with a trolley-wire or conductor, of a re-enforcing insulated support to which the said wire is secured, and insulation interposed between and rigidly secured to the said support and trolley-wire to electrically separate said wire and support, substantially as described.

2. The combination, with a trolley-wire or

conductor, of a re-enforcing support to which the said wire is secured, consisting of an insulated wire or cable and insulators interposed between and rigidly secured to said trolley-wire and re-enforcing wire or cable, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM VOGLER.

Witnesses:
JAS. H. CHURCHILL,
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