

(No Model.)

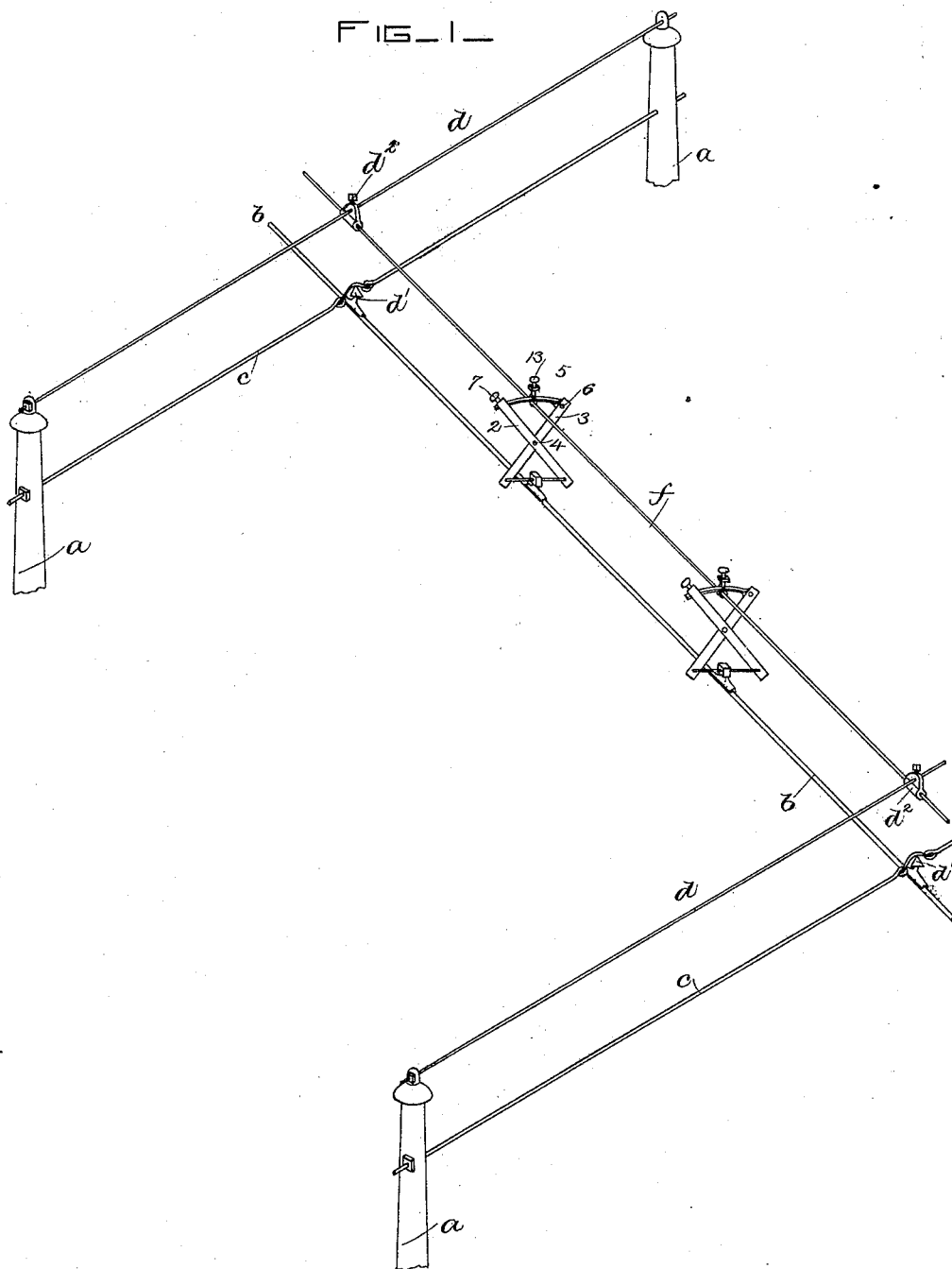
2 Sheets—Sheet 1.

W. VOGLER.

TROLLEY WIRE SUPPORTING APPARATUS.

No. 423,005.

Patented Mar. 11, 1890.



WITNESSES

Edgar A. Godden
Frederick E. Emery

INVENTOR

William Vogler,
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Att'y.

(No Model.)

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FIG. 2—

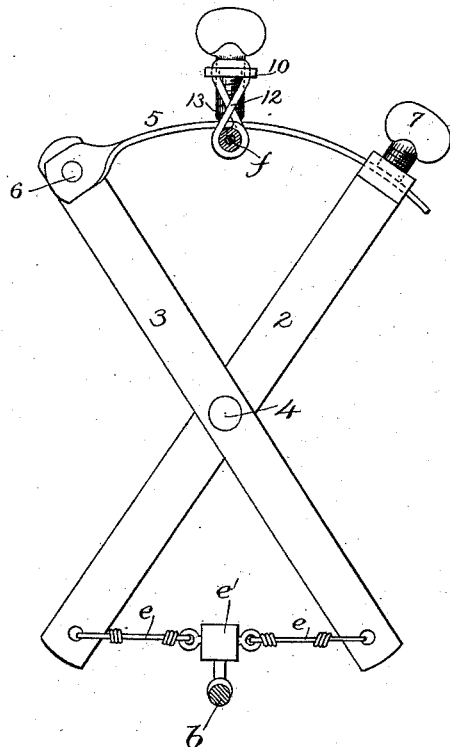


FIG. 3—

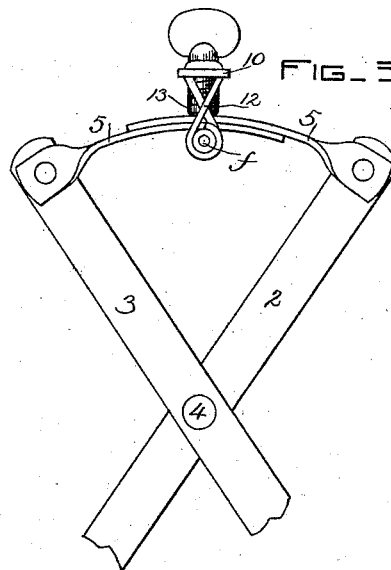
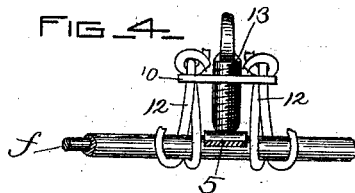


FIG. 4—



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UNITED STATES PATENT OFFICE.

WILLIAM VOGLER, OF SOMERVILLE, MASSACHUSETTS.

TROLLEY-WIRE-SUPPORTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 423,005, dated March 11, 1890.

Application filed January 8, 1890. Serial No. 336,242. (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 Trolley-Wire-Supporting Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

Trolley-wires as now commonly put up are supported at distances of from one hundred and fifty to two hundred feet by insulators suspended upon span-wires connected to iron poles. This plan of supporting the trolley-wires has been found to be dangerous, for at times the trolley-wires break and at times the span-wires break, resulting frequently in loss of life.

To overcome the dropping of the trolley-wires, I have devised the plan to be herein described.

In accordance with my invention I run supporting wires or cables substantially parallel to the trolley-wires, and sustain the said supporting-wires from brace-wires crossed from pole to pole above the usual span-wires. These supporting-wires between the brace-wires of opposite pairs of poles and at suitable distances apart—say ten or twenty feet, more or less—have attached to them auxiliary supports, which latter sustain the insulators, which in turn support the trolley-wire. As herein shown, the said auxiliary supports are made adjustable with relation to the supporting-wire, to thereby enable the strain on the trolley-wire to be so equalized and distributed as to prevent breaking strain on the trolley-wire, and what is of greater importance, should the trolley-wire be broken it will not fall to the ground, but will be held up out of danger from contact with people in the streets. In the form in which my invention is herein embodied the said auxiliary supports are shown as crossed levers.

Figure 1, in perspective, shows usual poles, span-wires, and brace-wires, and one supporting and one trolley wire sustained in accordance with my invention; Fig. 2, an enlarged detail of one of the auxiliary supports; Fig. 3, a modification of my invention, and Fig. 4 a detail of the nut and screw.

The poles *a a*, set up in pairs, are connected across by a span-wire *c*, parts of the span-wire being joined to an insulator *d'*, which may be of any usual construction, the said insulator supporting the usual trolley-wire *b* at the span-wire.

In accordance with my invention I connect the poles by means of brace-wires *d*, and to these brace-wires, by any usual or common coupling *d'*, I connect a supporting-wire *f*, which is run parallel, or substantially so, to the usual trolley-wire *b*, one supporting-wire for each trolley-wire. It is, however, necessary to sustain the trolley-wire more frequently than opposite the poles, and to do this I connect to the supporting-wire at suitable intervals of ten or twenty feet (more or less) auxiliary supports. (Best shown enlarged in Fig. 2.) These supports, as shown in Figs. 1 and 2, are represented as composed of crossed levers 2 3, pivoted at 4, the upper end of the said levers having a suitable cross-tie 5, (shown in Figs. 1 and 2 as a bar pivoted to the lever 2 at 6,) the opposite end of the lever being passed through a loop or eye formed at the end of the lever 3, an adjusting device (shown as a screw 7) being employed to keep the said levers spread at their lower ends to keep taut the secondary span-wires *c*, connected to the lower ends of the said levers, the said auxiliary span-wires supporting the intermediate insulators *e'*, which may be of any usual construction, the said intermediate insulators having the trolley-wire connected to them in any usual manner.

To suspend the auxiliary supporting devices from the supporting-wires, I have in the form of my invention shown in Figs. 1 and 2 provided a nut 10 at each end, with a loop or hook 12 to engage the supporting-wire *f*, the end of the screw 13 extended through the said nut bearing upon the cross-tie 5, passed over the suspending-wire, as shown best in Fig. 2. By loosening the screw 13 the auxiliary support may be tipped or turned in the arc of a circle about the wire *f*, to thus put on the trolley-wire strain in one or the other direction, as needed to equalize the said strains, and in case the trolley-wire breaks the said auxiliary supports suspended on the supporting wire or cable cannot drop.

The adjustment of the auxiliary support, as described, enables the trolley-wire to be kept parallel to the supporting-wires, and preferably in substantially the same vertical plane, and so as not to tip sidewise under the pressure of the trolley-wheel running on the said wire.

In the modification, Fig. 4, the cross-tie 5 is made in two pieces instead of one.

The described method of supporting the trolley-wire and keeping it parallel to the supporting-wire is a feature of my invention.

Under the term "auxiliary span-wires" I mean to include any suitable device to connect the insulation with the auxiliary supports.

This invention is not limited to the exact form shown for the auxiliary supports, as the shape and construction thereof may be variously modified, the gist of the invention being that they shall be capable of holding the trolley-wire parallel to the supporting-wire, and not twist or turn aside in the arc of a circle as the trolley-wheel runs on the trolley-wire.

I claim—

1. A trolley-wire, a series of span-wires, and insulators to sustain the said trolley-wire and co-operating brace-wires, and a supporting-wire sustained thereby, the latter having auxiliary supports provided with auxiliary span-wires and insulators to sustain the trolley-

wire at intervals between the usual span-wires, substantially as described.

2. A trolley-wire, a series of span-wires, and insulators to sustain the said trolley-wire and co-operating brace-wires, and a supporting-wire sustained thereby, the latter having auxiliary supports provided with auxiliary span-wires and insulators to sustain the trolley-wire at intervals between the usual span-wires, the said auxiliary supports being adjustable on or with relation to the said supporting-wire, substantially as described.

3. A supporting-wire and a parallel trolley-wire, combined with auxiliary supports consisting of crossed levers sustaining auxiliary span-wires and insulators at their lower ends, substantially as described.

4. A supporting-wire and a parallel trolley-wire, combined with auxiliary supports consisting of crossed levers sustaining auxiliary span-wires and insulators at their lower ends, and adjusting devices whereby the said auxiliary supports may be adjusted on the supporting-wire, for the purpose set forth.

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

WILLIAM VOGLER.

Witnesses:

BERNICE J. NOYES,
E. J. BENNETT.