

No. 688,346.

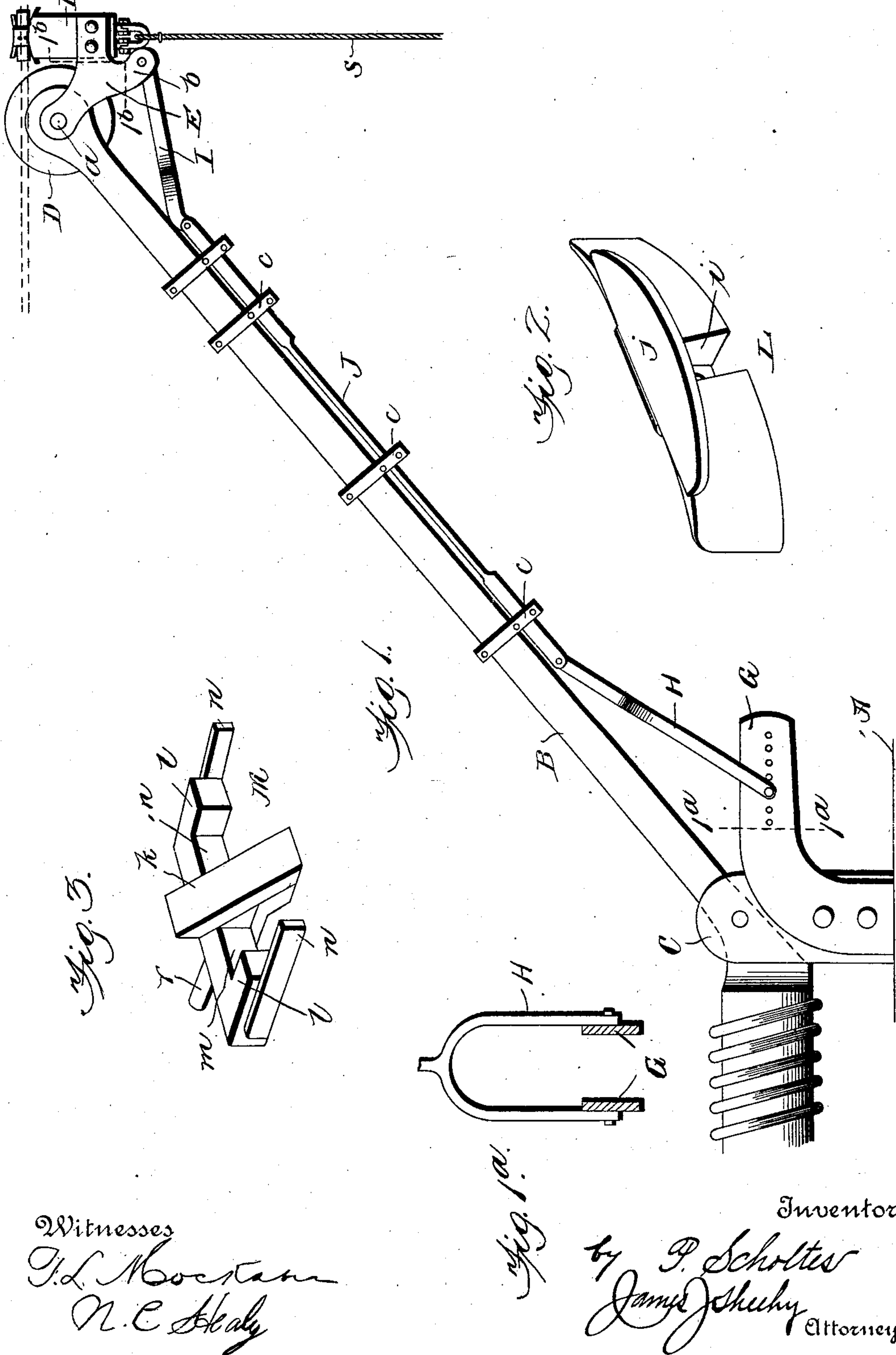
Patented Dec. 10, 1901.

P. SCHOLTES.
TROLLEY POLE FOR ELECTRIC CARS.

(Application filed Sept. 18, 1901.)

2 Sheets—Sheet 1.

(No Model.)



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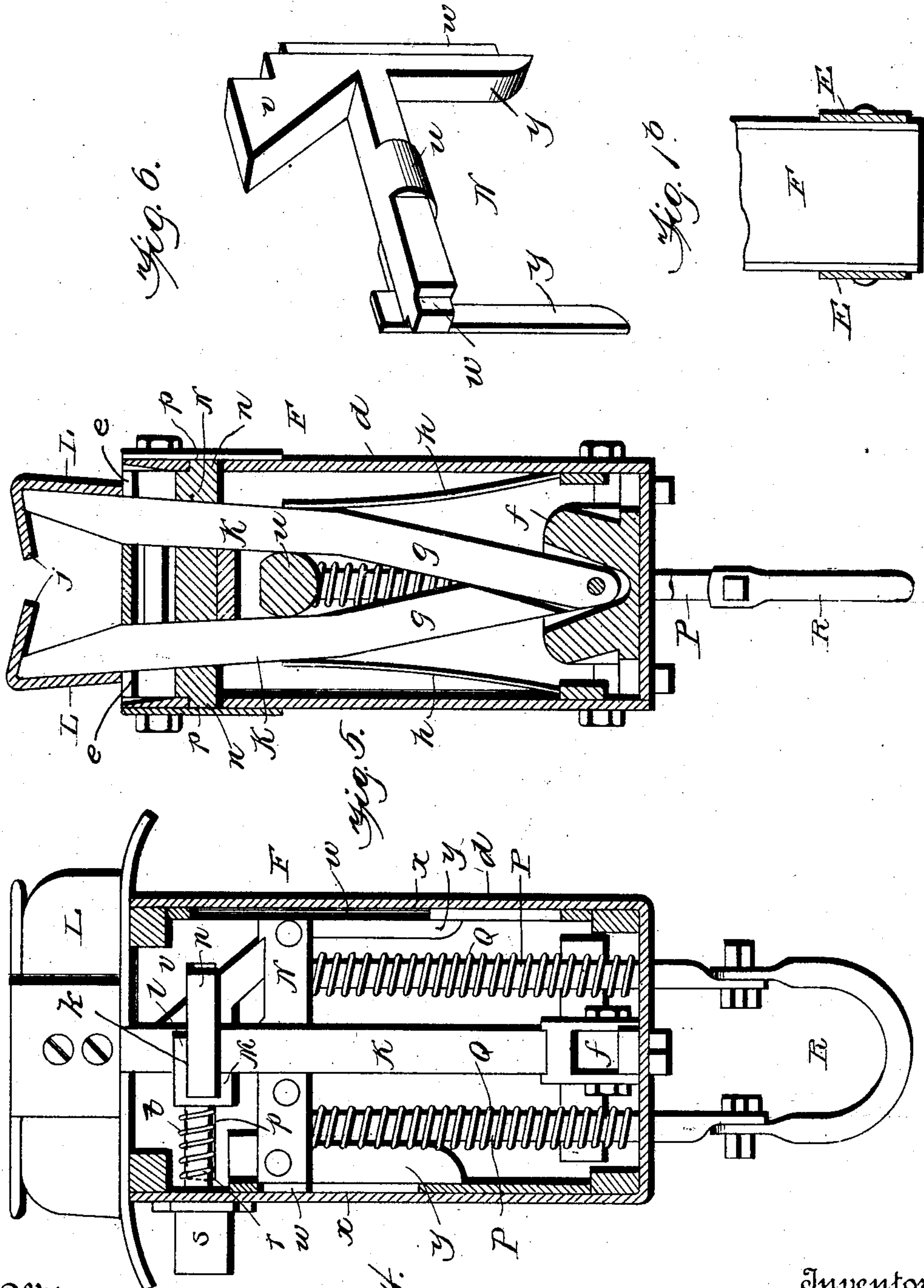
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Fig. 4.

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UNITED STATES PATENT OFFICE.

PHILIPP SCHOLTES, OF MOUNT OLIVER, PENNSYLVANIA.

TROLLEY-POLE FOR ELECTRIC CARS.

SPECIFICATION forming part of Letters Patent No. 688,346, dated December 10, 1901.

Application filed September 16, 1901. Serial No. 75,546. (No model.)

To all whom it may concern:

Be it known that I, PHILIPP SCHOLTES, a citizen of the United States, residing at Mount Oliver, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Trolley-Poles for Electric Cars, of which the following is a specification.

My invention relates to improvements in trolley-poles for electric cars; and it contemplates the provision of simple and reliable means calculated to prevent casual disengagement of a trolley from an overhead wire, and this without interfering with the trolley being drawn down and out of contact with the wire when desired.

With the foregoing in mind the invention will be fully understood from the following description and claims when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a side elevation illustrating a trolley-pole equipped with my improvements in its proper operative position. Figs. 1^a and 1^b are detail transverse sections taken in the planes indicated by the lines 1^a 1^a and 1^b 1^b, respectively, of Fig. 1. Fig. 2 is a perspective view of one of the jaws of the wire-receiver comprised in my improvements. Fig. 3 is a similar view of the horizontally-movable slide of said wire-receiver. Fig. 4 is a side elevation of the wire-receiver as it appears with one of the side plates of its casing removed. Fig. 5 is a transverse section of the wire-receiver, and Fig. 6 is a perspective view of the vertically-movable slide of the same.

In the said drawings similar letters of reference designate corresponding parts in all of the several views, referring to which—

A is a portion of the top of an electric car. B is a pole pivotally mounted in short standards C on said top and provided with a trolley D and also with the usual appurtenances for pressing the trolley against an overhead wire, which appurtenances I have deemed it unnecessary to illustrate.

E E (see Figs. 1 and 1^b) are vertically-disposed arms pivotally mounted on the axle *a* of the trolley D at opposite sides of the trolley-pole and extending rearwardly from said axle.

F is the wire-receiver hereinafter referred

to, the casing of which is interposed between and connected to the arms E in rear of the trolley D.

G G are upright plates connected to the outer sides of the standards C, as shown in Figs. 1 and 1^a.

H is a bifurcated link connected, preferably in an adjustable manner, to the plates G; I, a bifurcated link pivotally connected to depending branches *b* of the arms E, and J a link interposed between and connecting the links H I and adapted to be moved through guides *c* on the trolley-pole B. The links H I J serve to support the wire-receiver F in the position illustrated with respect to the trolley D, and when the trolley-pole is drawn down into a position adjacent to the top of the car, as is sometimes desirable, they will move with said trolley-pole. Likewise when the trolley-pole is released and permitted to reassume the position illustrated they will move with said pole and insure the wire-receiver resting in the position shown in rear of the trolley, in which position its jaws are adapted to receive the trolley-wire between them.

The wire-receiver F has for its purpose to hold the trolley D against casual disengagement from the wire, and in the preferred embodiment of the invention it comprises a case *d*, which, as before stated, is interposed between and connected to the vertically-disposed arms E on the trolley-pole levers K, which extend upwardly through slots *e* in the top wall of the casing and are provided above the same with jaws L, one of which is shown in detail in Fig. 2, a horizontally-movable slide M, (best shown in Fig. 3,) and a vertically-movable slide N. (Best shown in Fig. 6.) The levers K have their lower reduced ends arranged in a lapped position in a bearing-block *f* on the bottom of the casing and pivotally connected to said block. They also have lower inclined portions *g*, and are normally held in the position shown in Fig. 5 by flat springs *h*, connected to the side plates of the casing. The jaws L have kerfs *i* in their inner faces to receive the upper ends of the levers K, to which they are fixedly connected, and they also have inwardly-directed flanges *j* at their upper edges, which flanges in practice are designed to rest above the trolley-

wire and effectually prevent casual disconnection of the receiver therefrom. The said inner faces of the jaws L are curved, as shown in Fig. 2, so as to present convex surfaces to the trolley-wire, and thus lessen frictional wear of both wire and receiver, and for the same purpose the upper wall of the casing *d* is curved, as best shown in Fig. 4. The slide M, which extends throughout the width of the casing *d*, is provided at its middle with a beveled enlargement *k* and at its ends with inwardly-directed angular arms *l*, between which and the beveled enlargement *k* are recesses *m*, designed to snugly receive the upper straight portions of the levers K and hold the same against outward movement. Said slide M is also provided at the outer sides of the arms *l* with reduced portions *n*, designed to rest and move in horizontal guideways *p* in the side plates of the casing, and it is further provided with an outwardly-directed stem *r*, which is guided in a hollow projection *s* on one end wall of the casing and has for its purpose to support a coiled spring *t*, interposed between the end of said projection *s* and the slide. By reason of the said spring *t* the slide M is normally held in the position shown in Fig. 4, and in such position the slide is obviously enabled to hold the levers K against swinging outwardly and the jaws L from moving apart sufficiently far to permit the trolley-wire to pass between their flanges *j*. The vertically-movable slide N is disposed in the longitudinal center of the casing and is provided at its middle with a preferably rounded enlargement *u*, arranged between the levers K, as best shown in Fig. 5, and at its end with an upwardly-extending beveled enlargement *v*, complementary to and arranged to engage the beveled enlargement *k* of slide M. Said slide N is also provided at its ends with reduced portions *w*, arranged in vertically-disposed guideways *x* in the end walls of the case, and shoes *y*, arranged to slide against said end walls, so as to prevent binding of the slide in the casing.

P P are vertical rods connected to the slide N and extending downwardly through the bottom wall of the casing *d*. Q Q are coiled springs surrounding said rods and interposed between the slide N and the bottom wall of the casing, so as to return the slide to and normally hold it in the position shown in Figs. 4 and 5, and R is a bail connected to the lower end of the rods P and adapted for the connection of the rope S, usually employed in manipulating trolley-poles.

In the practical operation of my improvements it will be observed that when the trolley D is in engagement with the trolley-wire and said wire rests between the jaws L of the receiver F, as shown in Fig. 1, and the rope S is relieved of draft casual disengagement of the trolley from the wire will be effectually prevented—this because the space between the contiguous edges of the flanges *j* of jaws L is too small for the passage of the trolley-

wire. When, however, the rope S is pulled and the slide N is drawn downwardly in the casing *d* against the action of the springs Q, it will be seen that the beveled enlargement *v* of the slide N, acting against the beveled enlargement *k* of slide M, will press the latter outwardly and carry the recesses *m* thereof out of engagement with the upper straight portions of the levers K, and the rounded enlargement *u* of the said slide N, acting against the lower inclined portions *q* of the levers K, will force said levers and the jaws L thereon outwardly, and thereby afford a sufficient space between the inner edges of the jaw-flanges *j* for the passage of the trolley-wire. Subsequent to the operation described the wire-receiver F may obviously be drawn with the trolley D out of engagement with the trolley-wire. When the rope S is pulled upon, as in manipulating the trolley-pole to place the trolley in engagement with the trolley-wire, the slide M will be pressed out of engagement with the levers K, and said levers K and the jaws L will be pressed outwardly by the slide N in the manner before described. From this it follows that the wire-receiver may be readily made to receive the wire coincident with the engagement of the trolley with the wire; also, that when the rope S is relieved of draft subsequent to such operation the springs in the casing *d* will return the slides N and M to the positions shown in Figs. 4 and 5, and in consequence the levers K and the jaws L will be secured in such positions that the space between the inner edges of the flanges *j* of the latter will be too small for the passage of the trolley-wire.

My improved wire-receiver F is not only calculated to preclude casual disengagement of the trolley from the trolley-wire, but is also advantageous because in passing through a switch it is adapted to remain in engagement with one section of wire until the trolley is in engagement with the preceding section of wire, thus preventing an interruption in the supply of current to the car.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and relative arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claims.

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

1. A wire-receiver for trolley-poles comprising jaws, means for normally locking the jaws in a position to retain a trolley-wire between them, and means for disengaging the first-named or locking means from the jaws, and moving said jaws apart.

2. A wire-receiver for trolley-poles compris-

ing levers provided with jaws, a slide for engaging the levers and holding the jaws in a position to retain a trolley-wire between them, and a second slide, arranged, when moved, to disengage the first-named slide from the levers, and move said levers and consequently the jaws apart.

3. The combination of a trolley-pole pivotally mounted on an electric car, a wire-engaging device carried by arms pivotally mounted on the trolley-axle at opposite sides of the trolley, vertically-disposed plates on the car at opposite sides of the trolley-pole, and a connection comprising a bifurcated link connected to the arms of the wire-engaging device, a bifurcated link adjustably connected to the vertically-disposed plates on the car, and an intermediate link arranged in a guide on the trolley-pole.

4. The combination of a trolley-pole mounted on an electric car so as to move in a vertical plane, a wire-receiver comprising jaws, and spring-actuated means calculated to normally hold the jaws in a position to retain a trolley-wire between them, means for manipulating the trolley-pole connected with said spring-actuated means, a support for the wire-receiver connected with and movable vertically on the trolley-pole, and a connection between said support and the car; comprising a series of links held to and movable with the trolley-pole.

5. The combination of a trolley-pole mounted on an electric car so as to move in a vertical plane, a wire-receiver comprising a casing, levers mounted in the casing and carrying jaws, a spring-pressed slide arranged to normally engage the levers and thereby hold the jaws in a position to retain a trolley-wire between them, and a second spring-pressed slide arranged when moved against the action of its spring to disengage the first-named slide from the levers and press said

levers outwardly, means for manipulating the trolley-pole connected with said second slide, a support for the wire-receiver connected with and movable vertically on the trolley-pole, and a connection between said support and the car comprising a series of links held to and movable with the trolley-pole.

6. A wire-receiver adapted to be connected with a trolley-pole and comprising a casing, levers mounted in the casing and carrying jaws, a spring-pressed slide arranged to normally engage the levers and thereby hold the jaws in a position to retain a trolley-wire between them, and a second spring-pressed slide arranged, when moved against the action of its spring, to disengage the first-named slide from the levers and press said levers outwardly; said second slide being adapted for the connection of a trolley-pole-manipulating device.

7. A wire-receiver adapted to be connected with a trolley-pole, and comprising a casing, levers mounted in the casing, and carrying jaws having inwardly-directed flanges, a horizontally-movable, spring-backed slide arranged to normally engage and hold the levers against outward movement, and having a beveled portion, a vertically-movable slide arranged between the levers, and having a beveled portion to engage that of the horizontal slide, rods connected to the vertical slide and extending through the bottom of the casing, a bail on said rods, and springs surrounding the rods and interposed between the vertical slide and the bottom of the casing.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIPP SCHOLTES.

Witnesses:

WILLIAM THOMAS,
PHILIP DORCH.