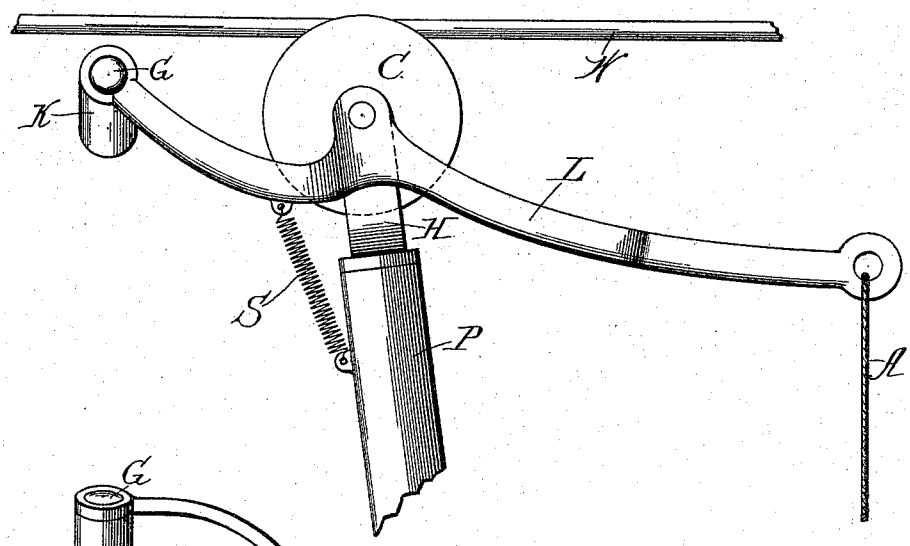
(No Model.)

E. GALE.

TROLLEY WIRE FINDER.

No. 526,183. Patented Sept. 18, 1894.

Fig. 1



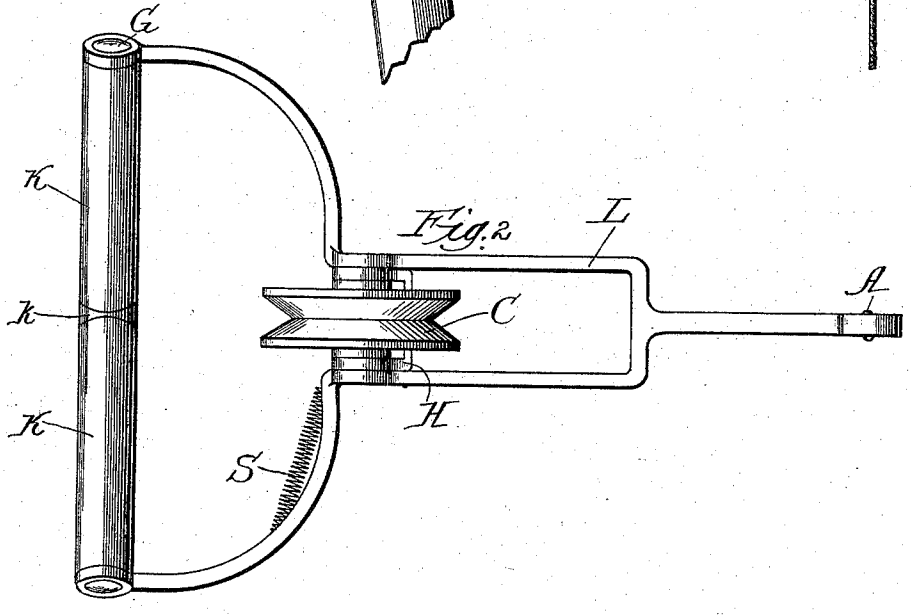
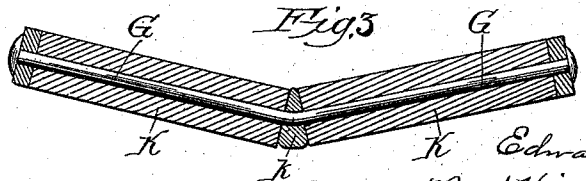


Fig. 2

Fig. 3



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UNITED STATES PATENT OFFICE.

EDWARD GALE, OF PEORIA, ILLINOIS.

TROLLEY-WIRE FINDER.

SPECIFICATION forming part of Letters Patent No. 526,183, dated September 18, 1894.

Original application filed November 21, 1892, Serial No. 452,677. Divided and this application filed January 15, 1894. Serial No. 497,003. (No model.)

To all whom it may concern:

Be it known that I, EDWARD GALE, a citizen of the United States, residing at Peoria, county of Peoria, and State of Illinois, have invented certain new and useful Improvements in Guards for Trolley-Wires, of which the following is a specification.

Referring to the accompanying drawings, wherein like reference letters indicate like or corresponding parts:—Figure 1, is a side elevation of my improvement. Fig. 2, is a top plan of the same, and Fig. 3, is an end view of the same.

This invention is in the nature of an improvement upon an invention for the same purpose shown, described and claimed in an application filed by me on November 21, 1892, Serial No. 452,677, and has been divided out of said application by order of the Patent Office.

The general description in the specification of said prior application applies with equal force in this case, and states regarding the objects of the invention as follows:—As trolleys have heretofore been constructed, the accidental disconnection of the contact wheel from the line wire has been liable to injure the wire, to interrupt the circuit and leave the car unmanageable, and to involve more or less delay and trouble in re-establishing the contact. The object of my invention is to so improve the old construction as to prevent the evils referred to.

To this end, my invention consists, broadly, in providing the trolley-pole with a guard or projection which, through the springing of the pole, will engage with the line wire whenever the contact wheel disengages therefrom, and thus prevent the pole from being thrown violently upward and injuring the line wire or guy wires.

It consists, secondly, in including said guard or projection in the pole circuit connection, so that the current, when broken by the line wire leaving the contact wheel, will be immediately restored by the wire lodging against the guard or projection.

It consists, thirdly, in a movable guard, adapted to raise the line wire and replace it upon the contact wheel.

It further consists in the subordinate combinations and devices more specifically pointed out in the claims thereof.

Form is not essential to the invention, as my several improvements may be carried into practice in a great variety of forms of apparatus.

In the drawings W, indicates the line wire; P, the trolley pole; C, the contact wheel, and H, the "harp" or bifurcated support of the contact wheel. The circuit is established through the contact wheel, harp and trolley pole to the motor, in the usual manner and need not be illustrated, as its devices form no part of my invention.

In my prior application before referred to, the device has a single revoluble spool, tapering from each end toward the middle, supported upon the trolley pole in such a manner as to extend laterally each side of the trolley wheel to catch the line wire in case it becomes disengaged from the trolley wheel. In this invention the distinctive idea rests in a form of guard in which two or more revoluble sleeves or spools serve to catch the line wire in the same manner.

In the preferred form shown in the drawings the lateral arms G, G, are formed of one piece and are inclined downward at the center, and the revoluble sleeves K, K, are mounted upon said arms, to prevent friction with the line wire. In this form I prefer to use the wedge-shaped center *k* upon the arms, for the inner ends of the sleeves to butt against, to facilitate the easy revolution of the sleeves, and to prevent the wire from forcing its way between the adjacent ends of the sleeves.

To enable the current to pass through the sleeves or guard to the motor, it is only necessary to have a metallic connection from the surface of the sleeves to the harp or to any part of the circuit connection of the wheel C,—for example, by making the sleeves of the guard metal, and running the supporting arms to the shaft or journal of the wheel, as shown in Figs. 1 and 2. Then, whenever the wheel C leaves the line wire and the guard catches the wire, the current momentarily interrupted, will be restored to the motor.

To enable the guard to be used as a means for restoring contact between the line wire and the wheel C, it is only necessary to adapt

the guard to be moved, at the will of the attendant, in such a manner as to raise the line wire and drop it into the groove of the wheel. A preferable means for doing this is shown, consisting in mounting the guard on a lever L, fulcrumed on the journals of the wheel C, and providing a cord A, or equivalent device, extending from the outer end of the lever to some convenient point where the attendant can reach it. By pulling the cord the lever and guard will be raised. The line wire will then slide down the inclines to the middle of the guard, where it will lie directly above the groove of the wheel, and upon releasing the cord, the wire will drop into said groove and re-establish the normal contact.

It is obvious that the lever L may be fulcrumed at any other convenient point near the end of the pole if desired.

In practice I prefer to use some form of spring connection to return the guard to its normal position and hold it there, as for example, the coiled spring S connected to the lever and to the pole.

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

1. The combination of the trolley-pole and wheel with a guard or finder having revoluble sleeves on each end to prevent friction with the line wire, said guard or finder being supported by the pole near the wheel, and extending laterally beyond the vertical planes of the sides of the wheel to catch the line wire in case it should become disconnected from the contact wheel, substantially as described.

2. The combination of the trolley pole and wheel with a guard or finder, mounted on the pole near the wheel; said guard having mounted thereon revoluble sleeves extending laterally beyond the vertical planes of the sides of the wheel, and being movable vertically with relation to the wheel; substantially as described.

3. The combination of the trolley pole and wheel with two or more revoluble sleeves near the wheel, extending laterally beyond the vertical planes of the sides of the wheel and mounted on lever arms pivoted to or in line with the journals of said wheel, substantially as described.

4. The combination of the trolley pole and wheel with a guard or finder supported by the pole near the wheel, said guard having mounted thereon revoluble sleeves extending laterally beyond the vertical planes of the sides of the wheel, and having their surfaces in electric communication with the circuit connections between the wheel and the motor, substantially as described.

5. The combination of the trolley pole and wheel with a guard or finder having mounted thereon revoluble sleeves constructed with inclined surfaces extending laterally beyond the vertical planes of the sides of the wheel supported upon a lever, whereby upon rocking the lever on its fulcrum the guard can be raised in order to raise the line wire and replace it into contact with the wheel, substantially as described.

6. The combination of the trolley pole and finder having mounted thereon revoluble sleeves with inclined surfaces extending laterally beyond the vertical planes of the sides of the wheel, and with means for raising the guard to replace the wire into contact with the wheel; substantially as described.

7. The combination of the trolley pole and wheel; and a guard or finder having mounted thereon revoluble sleeves constructed with inclined surfaces extending laterally beyond the vertical planes of the sides of the wheel; with means for raising said guard to replace the line wire into contact with the wheel; and a spring to restore the guard to its normal position; substantially as described.

8. The combination of the trolley pole and wheel with a guard or finder supported by the pole near the wheel, having mounted thereon revoluble sleeves the surfaces of which shall incline downward toward the center of the guard, and which shall extend laterally beyond the vertical planes of the sides of the wheel, to catch the line wire in case it should become disconnected from the wheel; substantially as described.

9. In a trolley, the combination of the grooved contact wheel C, with the revoluble finder sleeves K, K, extending laterally beyond the vertical sides of the contact wheel; substantially as described.

10. In a trolley, the combination of the grooved contact wheel C, and the revoluble finder sleeves or spools K, K, extending laterally beyond the vertical sides of the contact wheel; with the lever L supporting the guard and fulcrumed at the harp H, with a cord A, for controlling the guard; substantially as described.

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