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Patented Dec. 13, 1898.

L. A. COWLES.

TROLLEY REPLACER FOR ELECTRIC RAILWAYS.

(Application filed Feb. 7, 1898.)

(No Model.)

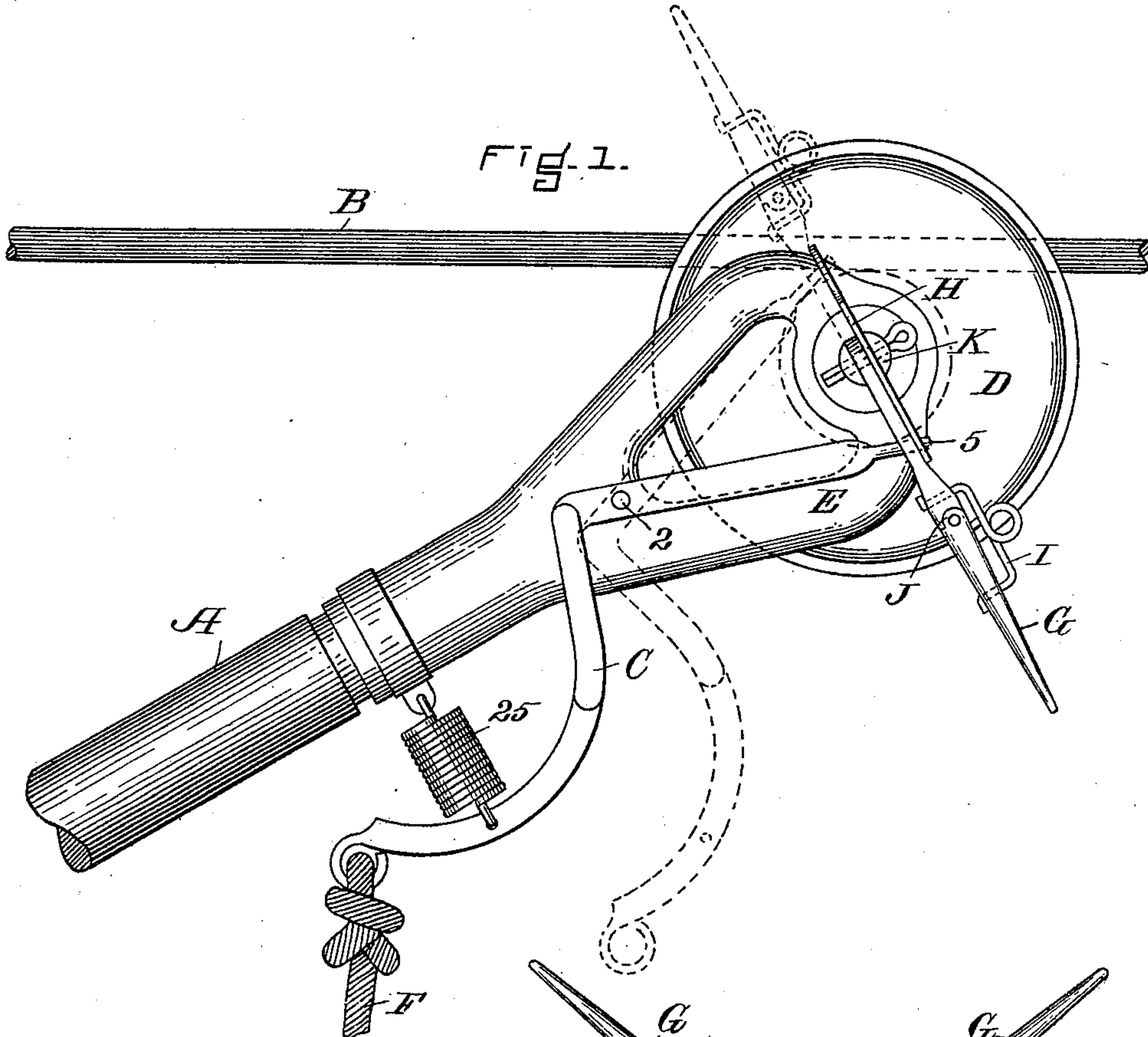
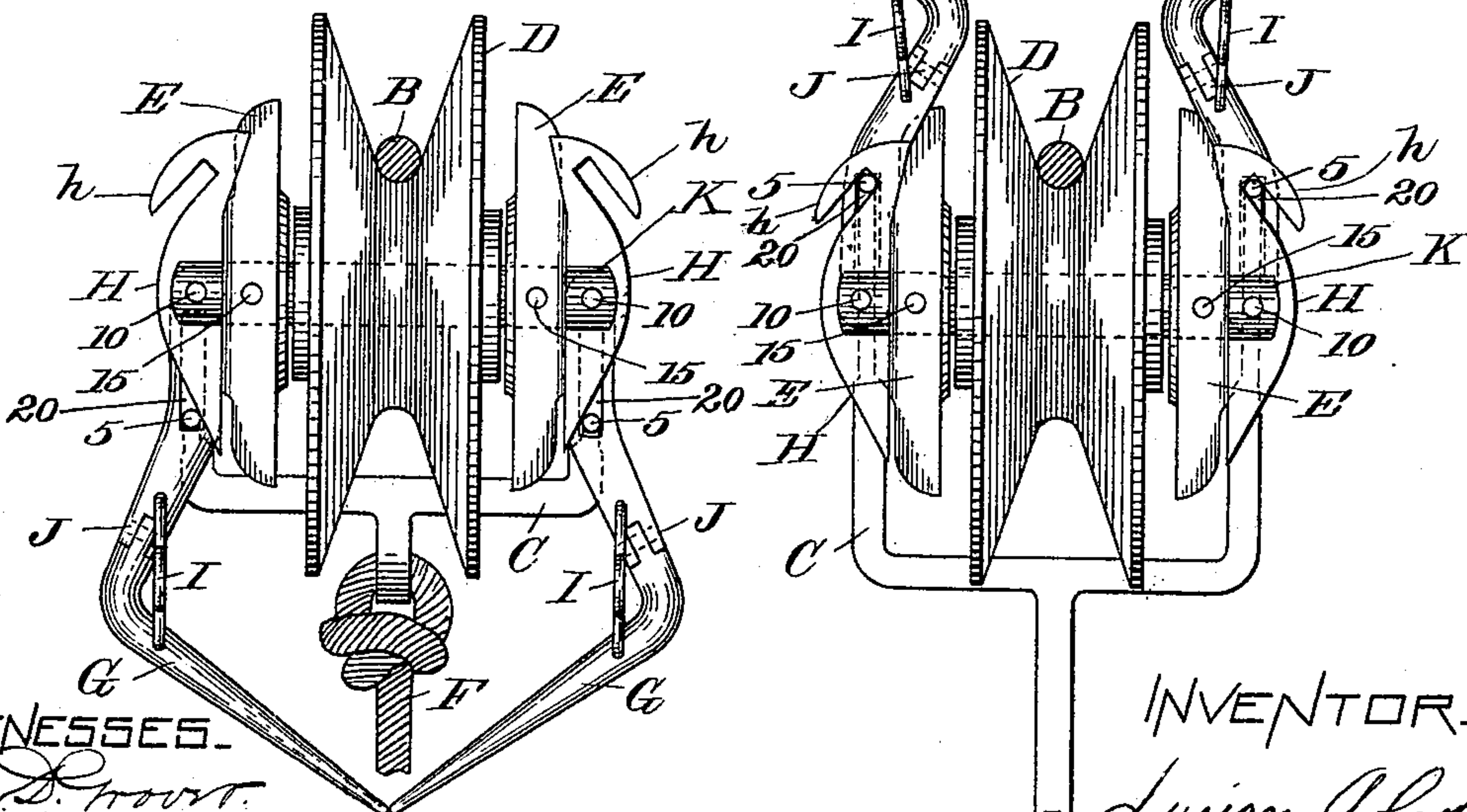


FIG. 2.

FIG. 3.



WITNESSES.

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LUCIAN A. COWLES, OF RANDOLPH, MASSACHUSETTS.

## TROLLEY-REPLACER FOR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 615,966, dated December 13, 1898.

Application filed February 7, 1898. Serial No. 669,332. (No model.)

*To all whom it may concern:*

Be it known that I, LUCIAN A. COWLES, a citizen of the United States, residing at Randolph, in the State of Massachusetts, have invented a new and useful Device for Restoring the Wheels of Electric Trolleys to the Trolley-Wire, of which the following is a specification.

My invention relates to the trolley-wheels used on electric cars in connection with a conductor carrying a current of electricity; and the objects of my invention are to avoid the trouble and delay occasioned in returning the trolley-wheel to position when it leaves the conductor and to provide a structure whereby the trolley-wheel may be easily and quickly restored to position. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the device; Fig. 2, an end view showing the guides down; Fig. 3, an end view showing the guides up.

Similar letters and numerals refer to similar parts throughout the several views.

The structure to which my invention is applied is the ordinary trolley-pole A, whose forked head E carries the trolley-wheel D, which runs upon the shaft K in normal contact with electric conductor B.

C is a forked lever pivoted to the trolley-pole at 2, normally held in the position shown in Fig. 1 by a spring 25 and having the operating ends 5. Connected therewith are the swinging guides G, normally in the position shown in Figs. 1 and 2, pivoted in a recess of shaft K by pivot 10 and having slots 20, in which the ends 5 operate. The cam-piece H is also pivoted in the recess of shaft K and has its end as a hook or detent h. The guides G have the hinges J opening against stress of springs I.

F is a depending cord, by pulling down upon which the spring 25 is strained and the lever C and the swinging guides G are thrown into the position shown in dotted lines in Fig. 1 and shown also in Fig. 3. The ends 5 of the operating-lever C play over the cam H to throw the swinging guides G upward until the ends 5 are caught in the catch h on the cam H. Upon releasing the pull upon the rope F the spring 25 will return the forked

lever C and the guides G to the position shown in Figs. 1 and 2.

It will now be evident that if the trolley-wheel has escaped from the trolley-wire the bringing of this device into operation will provide the forked catching device constituted by the two swinging guides G, one of which will strike the conductor, causing the trolley-wheel to easily and quickly return to position upon the conductor.

In case the dislodgment of the wheel occurs at a point near to a cross-wire it is evident that the swinging guides G might come into collision with such cross-wire. I therefore provide the swinging guides G with hinges J and springs I, whereby if said guides G strike such cross-wire the hinges will yield and allow the guides to pass such wire.

I do not mean to confine myself to the exact form of spring shown or to confine the guides G to precisely the shape shown or to limit them only by the hook h, since different forms of construction of the device as a whole may be adopted without departing from the idea of my invention.

Having described my invention, what I claim is—

1. A trolley-wheel-restoring device composed of a forked lever, properly connected with the trolley pole and wheel, and having the ends 5, swinging guides, slotted and adapted to be moved by the ends of said forked lever, proper mechanism for connecting and operating said lever and guides in connection with the trolley-pole, and a spring normally holding said device out of action, substantially as and for the purposes described.

2. A trolley-wheel-restoring device composed of a forked lever, properly connected with the trolley pole and wheel, and having the ends 5, swinging guides, slotted and adapted to be moved by the ends of the forked lever, a spring-hinge in said guides, proper mechanism for connecting and operating said lever and guides in connection with a trolley-pole, and a spring normally holding said device out of action, substantially as and for the purposes described.

3. In combination with a trolley wheel and pole, a forked lever C, having the ends 5, two swinging guides G pivoted to the trolley-pole

and slotted for said ends 5, a cam-piece H having the hook *h*, a spring 25 to hold said structure normally out of action, and a rope or handle for operating the same, substantially as described and shown.

4. In combination with a trolley wheel and pole, a forked lever C, having the ends 5, two swinging guides G pivoted to the trolley-pole and slotted to receive said ends 5, a hinge J and spring I, a cam-piece H having the catch *h*, a spring 25 to hold said structure normally out of action, and a rope or handle for operating the same, substantially as described and shown.

5. In a trolley-wheel-restoring device, the combination with the pole or wheel, of the forked lever C, having the ends 5, and the swinging guides G, properly connected with the trolley-pole and adapted to be moved by the forked lever, substantially as described.

In witness whereof I hereunto subscribe my name, in the presence of two witnesses, this 5th day of February, 1898.

LUCIAN A. COWLES.

Witnesses:

C. H. HANSON,  
EDWARD A. LANE.