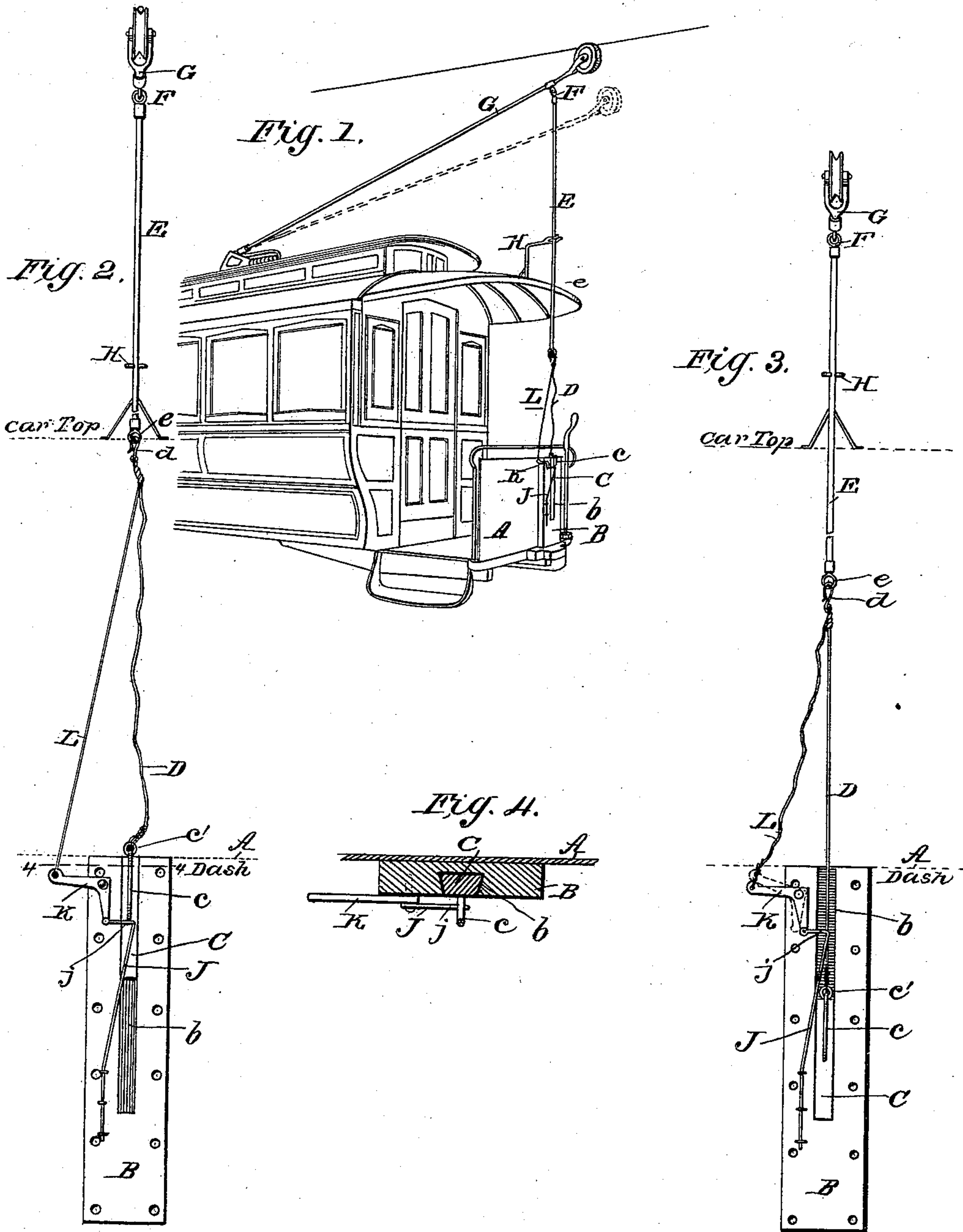


(No Model.)

M. V. NICHOLS & J. A. FRASER.  
TROLLEY CATCHER.

No. 532,477.

Patented Jan. 15, 1895.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MARTIN VAN BUREN NICHOLS AND JAMES ALLEN FRASER, OF PORT ARTHUR, CANADA.

## TROLLEY-CATCHER.

SPECIFICATION forming part of Letters Patent No. 532,477, dated January 15, 1895.

Application filed May 26, 1894. Serial No. 512,566. (No model.)

*To all whom it may concern:*

Be it known that we, MARTIN VAN BUREN NICHOLS and JAMES ALLEN FRASER, residing at Port Arthur, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Trolley-Catchers, of which the following is a specification.

Our invention is in the nature of attachments for electric car trolleys adapted to regulate the movements of the trolley and automatically control it and prevent it from flying up and breaking or damaging the goose necks, feed arms, &c., when such trolley becomes disengaged from the wire; and such invention has primarily for its object to provide attachments of this character of a simple and inexpensive structure, which can easily be manipulated and which will positively and effectively serve for the intended purposes.

It also has for its object to provide attachments of this kind, which will automatically serve to pull the trolley arm down from engagement with the wire and supports, as the wheel jumps therefrom, and which can be quickly adjusted by the motorman to reset the wheel against the wire.

With other minor objects in view, which hereinafter will be referred to, the invention consists in such novel combination and peculiar arrangement of parts as will hereinafter be first described in detail and then specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of an electric motor car equipped with our improved attachments, the trolley arm being shown tripped and pulled down from the wire, in dotted lines. Fig. 2 is a face view of the attachments, the parts being set to their normal position. Fig. 3 illustrates the parts at their "tripped" position; and Fig. 4 is a horizontal cross section on the line 4—4 Fig. 3.

Referring to the accompanying drawings, in which like letters indicate similar parts in all the figures, A indicates the dash board of the car, to which is secured a boxing or guide member B, provided with a slot or groove way b, disposed centrally nearly its entire length from the top to the bottom, in which is held

to slide a weight C, in practice, sufficiently large to overcome the upward spring tension of the trolley arm to pull it down from contact with the wire, when released, for a purpose presently described. This weight, which may have guide grooves, or dovetail connections, or be otherwise held in the slot or way b, has a handle member c whereby it can be conveniently drawn upward, when desired, and which also serves as a detent or lock to hold it to its elevated position. This weight has a hook or eye portion c' to which is connected a cord D the upper end of which has a snap hook d, which engages an eye e, at the lower end of a cord or pole E, the upper end of which has a pivotal or swivel connection F with the trolley arm G, as shown most clearly in Fig. 1, such pole being guided in a bracket H secured on the top of the car as shown.

It will be noticed that the normal relation of the trolley arm, the pole E, the weight C, and cord D, is such, that the cord D will be held somewhat slack. The object in thus arranging the several parts is, to provide for automatically setting the said parts to hold the trolley arm down after it becomes disengaged from the wire. To this end a spring catch member J is secured in the box with its detent or lock portion j normally projected over the groove or way b, and in engagement with the under side of the handle c such portion j being connected with one end of a bell crank or trip lever K, the opposite end of which is connected to a cord L, the upper end of which has a snap connection with the ring e, such cord L being normally held taut as shown.

So far as described it will be readily seen, that in case the trolley should slip off the wire, the spring tension on the arm will serve to immediately throw the wheel above the wire. In doing so the pole E will draw on the cord L and thereby rock the trip lever K, and in consequence pull the spring member from under the handle member of the weight, which being thus released drops to the bottom of the way b and as it descends it draws on the cord D and pole E and pulls the trolley arm down to the position shown in dotted lines in Fig. 1.

It should be stated that in practice a duplicate set of attachments, (one on each dash



board) is provided, and as the brackets have spring fingers to more securely guide the pole in position, it follows, that, when the trolley is shifted at the end of the car route, and the cords at one end are disconnected from the pole F, such pole can be quickly drawn out of the guide H and moved with the trolley arm around to the other end of the car, adjusted in the opposite bracket and connected with the attachments at such other end.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with the trolley arm, and the pendent pole, of a guide way held on the car, a weight held to slide vertically thereon, a flexible connection secured to the weight at one end and the pole at the other, a detent for holding the weight elevated, having an unlocking means connected with the pole, and arranged to be operated by the upward movement of the trolley arm, to release the detent from the weight, substantially as and for the purposes described.

2. The combination with the trolley arm, the pendent pole pivotally connected to the outer end thereof, and the guide or box adapted to be secured to the dash board, of

a weight held to slide vertically on such box, having a handle member, a spring catch adapted to engage such member when the weight is elevated, a flexible connection secured to the weight and to the lower end of the pole, a bell crank lever connected to the catch at one end, and a connection between the lever and the said pole, all arranged substantially as shown and for the purposes described.

3. The combination with the trolley arm the bracket on the car top, the pole pivotally connected with the trolley arm, and the guide or box held on the dash board, of the weight, held to slide vertically on the box, having a handle member, the spring detent, adapted to engage the said handle, the bell crank lever, the taut cord connection connected therewith, the slack cord connection secured to the weight, said cord connections having a snap hook or detachable connection with the lower end of the pole all arranged substantially as shown and described.

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Witnesses:

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