(No Model.)

# W. L. BROWNE.

## TROLLEY CATCHER.

No. 488,706. Patented Dec. 27, 1892.

Fig. 1

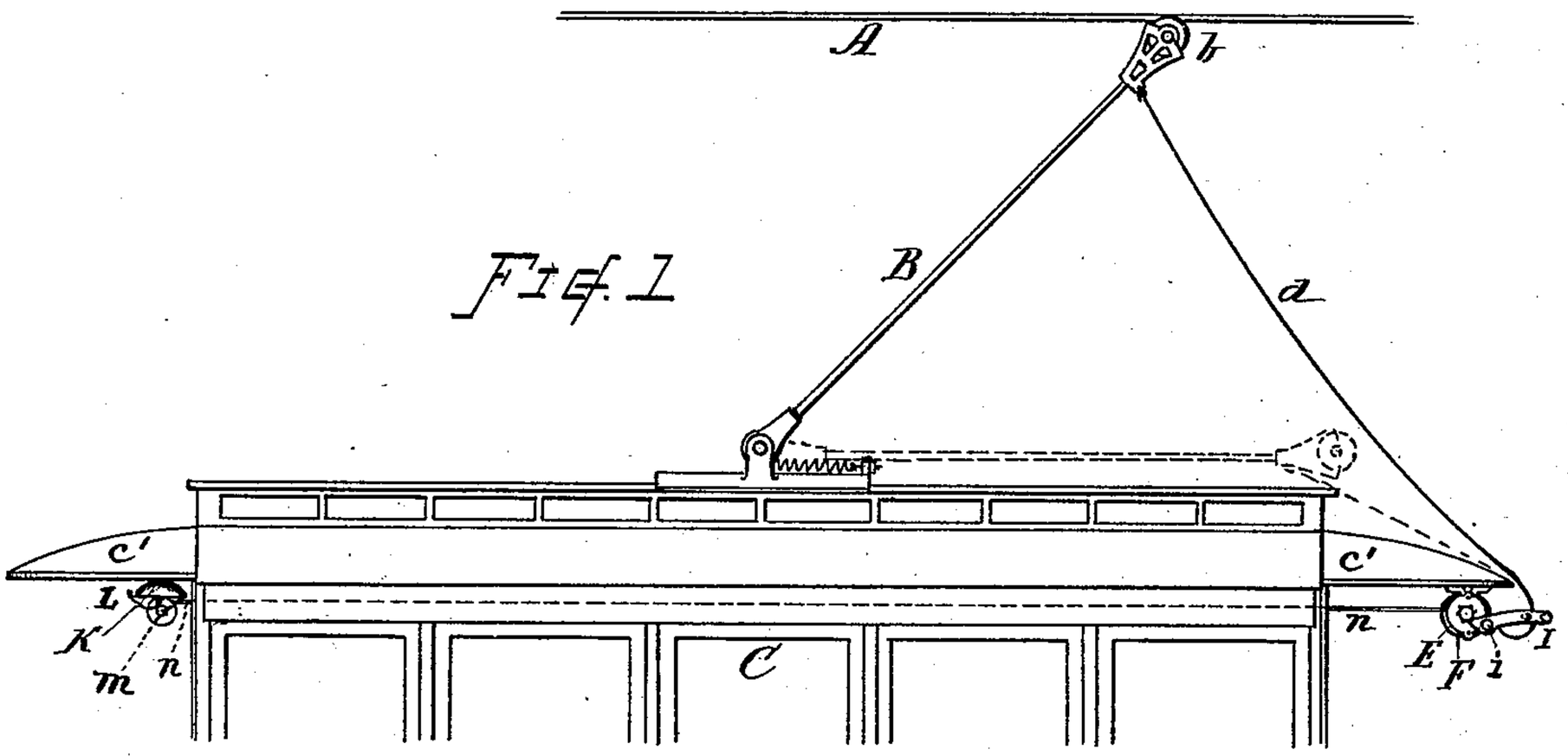



Fig. 2

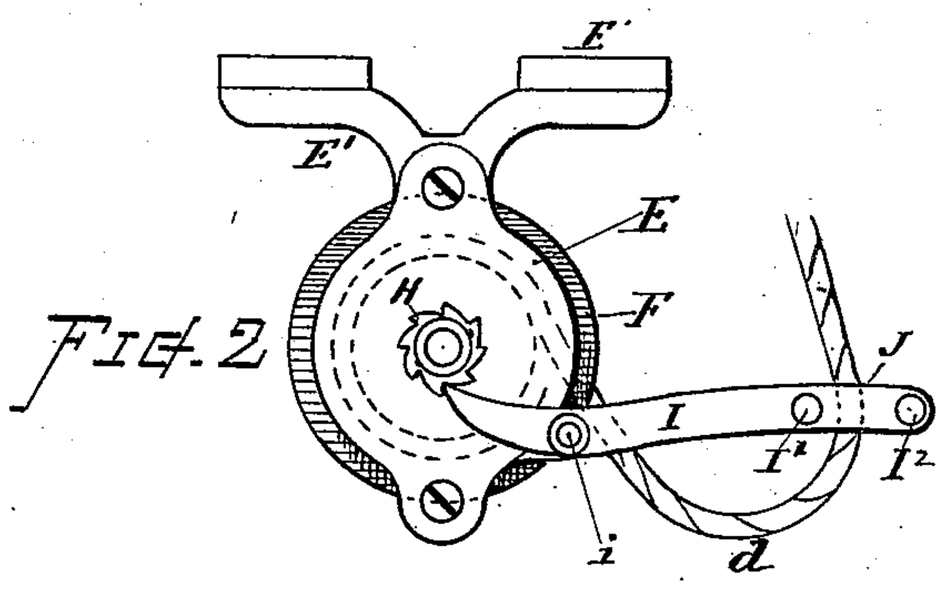
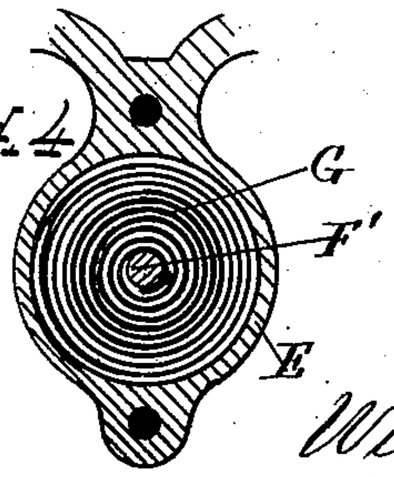



Fig. 3




Fig. 4

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# UNITED STATES PATENT OFFICE.

WILLIAM L. BROWNE, OF WORCESTER, MASSACHUSETTS.

## TROLLEY-CATCHER.

SPECIFICATION forming part of Letters Patent No. 488,706, dated December 27, 1892.

Application filed July 8, 1892. Serial No. 439,393. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. BROWNE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Trolley-Catcher for Electric Cars, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

This invention relates to certain improvements in that class of trolley catchers described in Letters Patent No. 418,942, heretofore granted to me; the object of the present invention being to provide a more compact and efficient mechanism for winding in the trolley rope, and also to afford means for guiding the rope by the pawl mechanism to prevent the displacement of the rope in its action.

Another object is to provide, in combination with a trolley-catcher, a signal device controlled therefrom, or means for automatically notifying the motor-man when the trolley leaves the power wire.

I attain these objects by a mechanism constructed and organized as illustrated and explained in the following description; the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a side view of the top of a car, its trolley pole and the line wire, illustrating the manner in which my improved mechanism is arranged therewith. Fig. 2 is an end view of my improved trolley-catcher mechanism. Fig. 3 is a plan view of the same together with the automatic signaling devices. Fig. 4 is a section view through one of the spring chambers and volute-coil springs.

In referring to parts, A denotes the line or power-wire; B the trolley pole carrying the trolley *b* at its head and having its lower end hinged and mounted upon the car in any well known manner.

C indicates the car provided with the usual hoods *c'*; and *d* indicates the rope for controlling the trolley-pole in usual manner.

The trolley-catcher mechanism comprises a drum and actuating springs for automatically winding up the rope, and a let-off that permits the mechanism to act when the trolley, from any accidental cause, escapes from the power-wire A, the purpose or general operation being similar to that described in my former patent; but the present means being of improved structure.

F indicates the winding drum fixed on a shaft F' that is journaled in hanger-brackets or heads E adapted by suitable ears or attaching plates E' to be secured to the hood of the car, as in Fig. 1. The heads E are each chambered cylindrically to serve as a case or barrel for the actuating springs, and each incloses a volute-coiled flat steel spring G which is suitably connected with the barrel and with the shaft F' to exert its force for turning the winding drum F. The spring-chambers have suitable removable caps *e*. The ratchet wheels H are fixed on the respective ends of the drum shaft outside the heads E, and pawl levers I are fulcrumed on the heads E, as at *i*, the points of which engage the respective ratchets, while their other ends extend backward and are joined to each other by two rods I' $I^2$, as shown in Fig. 3, in a manner to provide an inclosed slot or space J through which the rope is guided, and thereby prevented from becoming displaced in its run onto or from the drum. At one end of the drum there is a grip or snap device 5 for catching the rope onto the drum and permitting its ready disengagement therefrom. Said grip is preferably made as a projecting finger with a spring-pressed dog 6 arranged so that the rope with a knot at its end will be held by simply passing it beneath the grip finger.

Combined with the trolley-catch mechanism I employ signaling devices that are automatically actuated in conjunction with the trolley-catcher to give notice to the motor-man when the trolley escapes from the power line. The signal in the present instance consists of a bell K supported beneath the hood at the opposite end of the car from the drum F. The bell is provided with a suitable striker L, an operating arbor *m* and a spring M for actuating the same. A cord or pull *n* extends from the arbor *m* (or a drum *m'* thereon) to a groove or sheave $F^2$ on the rope-winding drum F; said cord being arranged so that when the drum operates for winding on the rope the cord *n* will be drawn onto the sheave $F^2$ and the bell sounded; then when the rope

$d$ is drawn from the drum the cord $n$ is released therefrom and re-wound on the signal arbor $m$ by the action of its spring M.

In the operation, the springs are held strained by the ratchets and pawls while the trolley is on the power wire, and in case the trolley escapes therefrom and flies upward the pull on the rope $d$ raises the rear ends of the pawls I releasing the ratchets, and the springs G act to rotate the drum F and wind in the rope $d$ drawing the trolley down to the position indicated by dotted lines Fig. 1, at the same time by winding in the cord $n$ causing the signal bell K to sound.

I claim as my invention herein to be secured by Letters Patent,

1. The pawl-levers having their arms connected across by two bars, or forming an inclosed rope-guiding space, in combination, with the spring-actuated drum, its fulcrum-supporting brackets, the ratchet-wheels, and the trolley-pole rope, substantially as set forth.

2. In a trolley-catcher, the winding drum provided with the snap-dog or gripping device for retaining the rope end in connection with said drum, as set forth, in combination, with the drum-support brackets attached to the hood of the car, the actuating springs, ratchets, pawls, and trolley-pole rope, for the purpose specified.

3. The combination, with the trolley and car, of an automatic trolley-catcher attached to the rear part of the car, a signaling device located at the front part of the car, and a cord or pull connecting said signal and trolley-catcher, whereby the signal device is automatically actuated by the operation of said trolley-catcher, for the purpose set forth.

4. The combination, of the rope-winding drum having the groove or sheave thereon, its supporting brackets, actuating springs, ratchets and pawls, the signal-bell, its striker-operating arbor and winding spring; and the cord or pull connecting said signal-operating arbor with the winding drum sheave, all substantially as and for the purpose set forth.

Witness my hand this 6th day of July, A. D. 1892.

WILLIAM L. BROWNE.

Witnesses:

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