

(No Model.)

R. ORME.
TROLLEY CATCHER.

No. 580,708.

Patented Apr. 13, 1897.

Fig. 1.

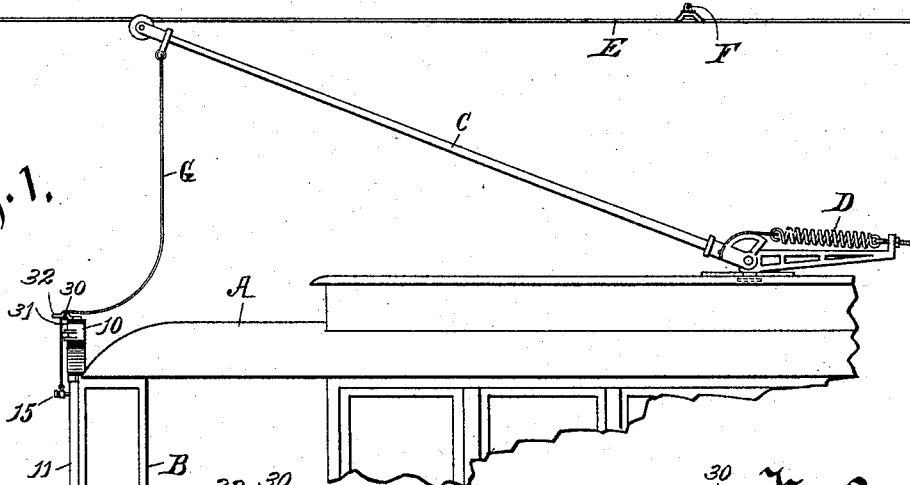


Fig. 2.

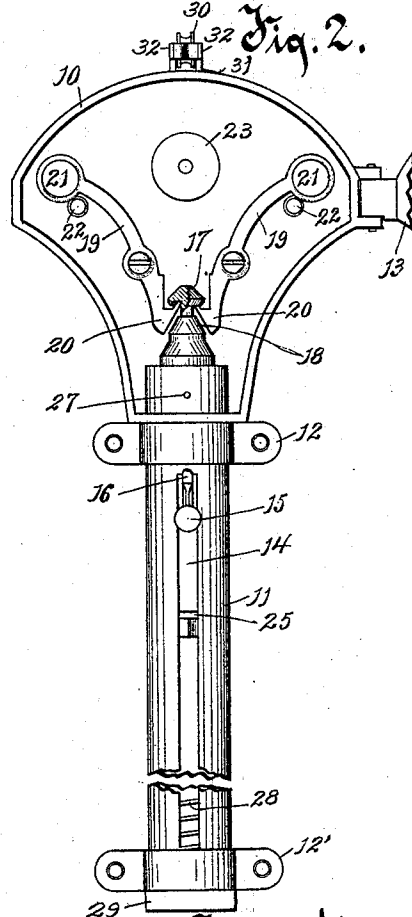


Fig. 3.

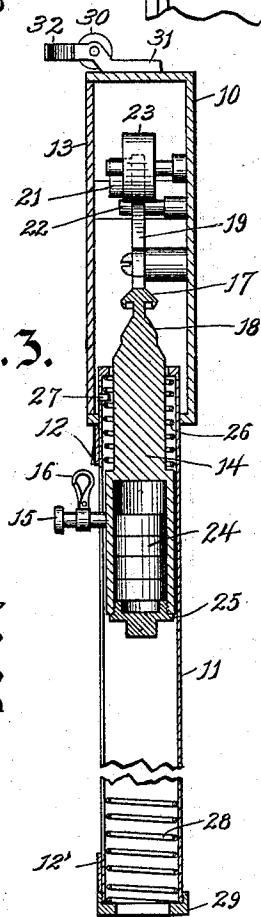
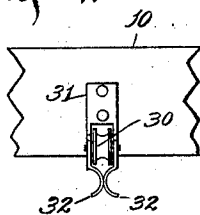


Fig. 4.



Witnesses.

W. Keeney.
Anna C. Faust.

Inventor.

Robert Orme
By Benedict Morell
Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT ORME, OF RACINE, WISCONSIN.

TROLLEY-CATCHER.

SPECIFICATION forming part of Letters Patent No. 580,708, dated April 13, 1897.

Application filed July 23, 1896. Serial No. 600,189. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ORME, of Racine, in the county of Racine and State of Wisconsin, have invented a new and useful Improvement in Trolley-Catchers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

As electric street-car systems are now constructed and operated it is common to have an electricity-supplying trolley-wire stretched above the car-track centrally, which wire is supported in place by laterally-extending arms fixed on adjacent posts or by wires stretched across the street and secured to posts at or near the curbs, and a trolley mounted in the extremity of a pole hinged and swiveled on the top of the car and provided with a spring adapted to throw the pole upwardly and thereby to hold the trolley releasably against the trolley-wire on which it travels. In such systems it is not infrequent for the trolley to accidentally leave the wire when the car is in motion, especially at crossings, curves, switches, or splicings of the wire, and when this occurs the trolley-pole is thrown upward by the spring so high that as the car runs along on the track under acquired momentum it is liable to and it often does contact with the laterally-extending trolley-wire-supporting arms or cross-wires, breaking either the trolley-pole or the wire-supporting arms or cross-wires.

The object of my invention is to provide means to automatically and promptly retrieve or pull down the trolley-pole when the trolley leaves its wire, and thus to obviate the breaking of or the injury to the trolley-pole or wire-supporting arms or cross-wires.

My invention consists of the devices and combinations of devices hereinafter described and claimed or their equivalents.

In the drawings, Figure 1 is a side elevation of a fragment of a street-car, showing in connection therewith the trolley and wire on which it travels and my improved device for retrieving the trolley when it leaves the wire. Fig. 2 is a front elevation, looking toward the rear of the car, of my improved device, parts being broken away for convenience of illus-

tration. Fig. 3 is a longitudinal section, mostly centrally, of my improved devices at a right angle to the elevation shown in Fig. 2. Fig. 4 is a top plan view of a detail of the construction.

In the drawings I have shown a fragment of a car with its trolley and the trolley-wire in such relation thereto as are in common use. The fragment of the car A has in connection therewith a vestibule B, and the trolley-pole C is hinged at its lower extremity in a trolley-frame swiveled on the car, and a spring D is adapted to hold the pole upwardly, so that the trolley at its free extremity shall ride on a bearing upwardly against the trolley-wire E. A transverse trolley-wire-supporting wire F is indicated, which is such as is in common use stretched across the street for supporting the trolley-wire. The trolley-pole is provided with a trolley cord or rope G, which must be always more or less slack to permit a certain amount of freedom of movement of the trolley-pole with reference to the car to permit the car and trolley to accommodate themselves to the conditions existing at curves, crossings, and inequalities in the height of the trolley-wire above the track on account of depressions in the track or otherwise. The spring D is so mounted and acts that the pole C, if the trolley accidentally leaves the wire, will be thrown upwardly above the horizontal plane of the wire and so that as the car moves forward under acquired momentum it will be likely to contact with the cross-wire F unless retrieved or pulled down before the trolley-pole comes to the cross-wire.

A bracket or case 10, of suitable form and provided with a downward tubular extension 11, is secured to the car conveniently by means of the clips 12 12', especially when the car is provided with a vestibule B, as shown in the drawings. A door 13 is preferably provided for covering the front of the case 10 and thereby inclosing the devices mounted therein. A weight 14 is arranged to fall freely a limited distance in the tubular extension 11. This weight is provided with a stud-pin 15, to which the trolley-rope G is attached conveniently by means of the hook 16, having a mousing to retain the rope therein. The pin projects

through an elongated slot in the tube 11, permitting free vertical movement of the weight 14. The weight 14 is provided with a cone-shaped head 17, and the upper portion of the body is beveled or truncated, as indicated at 18. For supporting this weight 14 out of action at the upper portion of the tubular case 11 one or more (preferably duplicate) catches 19 are provided, which catches consist of lever-arms located opposite each other and pivoted medially on the case 10, the lever-arms being provided at their lower extremities with inclined faces adapted to contact with and be pushed laterally by the upper cone-surface of the head 17 and by the beveled surface 18 of the weight 14, and also with shoulders or hooks adapted to take under the head 17 and thereby releasably support the weight 14. These lever-catches 19 are respectively provided at their upper extremities with weights 21, and the catches are so formed that these weights are outside of the perpendiculars through their respective pivotal points, whereby the weights are adapted to throw the lower extremities of the catches inwardly, whereby they normally catch under the head 17. Pins 22, fixed in the case 10, are adapted to contact with and prevent the undue tilting outwardly of the upper extremities of these catches beyond what brings the lower extremities of the catches into proper positions to be struck and acted upon by the upwardly-moving head 17 of the weight 14. An interposed block, preferably a rubber cushion 23, secured to the case 10, is adapted to prevent the movement of the upper extremities of the catches toward each other beyond points at which they will be actuated by gravity to fall outwardly away from each other. This construction automatically secures the lower extremities of the catches 19 in position to be acted upon by the upwardly-moving head 17 when the weight has been released therefrom.

The weight 14 is preferably made hollow at its lower extremity, so that it can be loaded with additional disks or blocks 24, which are retained in the weight by the plug-nut 25. A spring 26, inserted in the upper end of the tube 11 and held in place by the pin 27, and the spring 28 in the lower end of the tube 11, held in place by the cap 29, serve as cushions against which the weight 14 is received at the upper and lower limits of its travel, and the shock of a sudden stopping thereof thereby obviated.

That the strain of the trolley-cord G on the pin 15 may always be in the direction of the elongated slot in the tube 11 in which the pin moves, the trolley-rope is advisably carried over a pulley 30, mounted in a bracket 31, secured to the top of the case 10 directly above the line of travel of the pin 15.

The trolley-rope is held releasably to the pulley 30 by means of the spring-guides 32, secured to the bracket 31.

In use the trolley-cord G being attached to

the pin 15 the weight 14 is raised sufficiently to be engaged and supported by the automatic engagement therewith of the catches 19, in the manner shown in Fig. 2, and so that there will then be a little slack in the trolley-rope G, substantially as indicated in Fig. 1. In such condition, if the trolley is thrown off the wire E the spring D will instantly throw the pole upwardly and the pull or jerk on the trolley-rope will lift the weight 14 sufficiently to bring the beveled part 18 into contact with the lower extremities 20 of the catches 19 and throw them laterally with such force as to disengage them from beneath the head 17, and thereupon the weight 14 will immediately fall by gravity, and being sufficiently heavy therefor will retrieve or pull the trolley-pole C down and hold it in a position that will prevent its contact with the cross-wires or supporting-arms of the trolley-wire while the car is running ahead under acquired momentum. The attendant can readily replace the trolley on the wire by lifting and resetting the weight 14 on the catches 19. It will be understood that on raising the weight 19 the conical head 17 will push the lower extremities 20 of the catches apart, so that the hooks or shoulders thereon will pass beneath and engage the head.

What I claim as my invention is—

1. The combination on a car with a spring-actuated trolley-pole provided with a trolley-cord, of a pole-retrieving device mounted on the car, comprising a gravity-actuated weight to which the cord is attached, a catch or catches releasably supporting the weight, and means by which the catches are actuated by the raising of the weight to automatically release it.

2. In a trolley-pole-retrieving device, the combination of a weight having a beveled upper extremity, a head secured to the weight above the beveled end, gravity-actuated lever-catches arranged to releasably take under the head and support the weight, and faces on the catches adapted to contact with the beveled end of the weight when it is lifted and be thereby pushed laterally from engagement with the head.

3. In a trolley-pole-retrieving device, the combination of a weight having a beveled upper extremity, a conical head secured to the weight above the beveled end, gravity-actuated lever-catches arranged to releasably take under the head and support the weight, stops to limit the tilting of the catches both inwardly and outwardly, and faces on the catches adapted to contact with the beveled end of the weight when it is lifted and thereby to be pushed laterally from beneath the head said faces being also adapted to contact with the conical face of the head and be forced laterally by the lifting of the head permitting it to pass the catches.

4. In a trolley-pole-retrieving device, the combination with a weight having a head and

a beveled face, of tilting lever-catches respectively weighted at one extremity and provided with shoulders or hooks at the other extremity and so pivoted as by gravity to bring the
5 shoulder or hook extremities near to each other, and stops to limit the movement of the catches in both directions.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT ORME.

Witnesses:

ERASTUS C. PECK,
JNO. W. KNIGHT.