

No. 621,422.

Patented Mar. 21, 1899.

R. I. KROFT.  
TROLLEY CATCHER.

(Application filed Apr. 14, 1898.)

(No Model.)

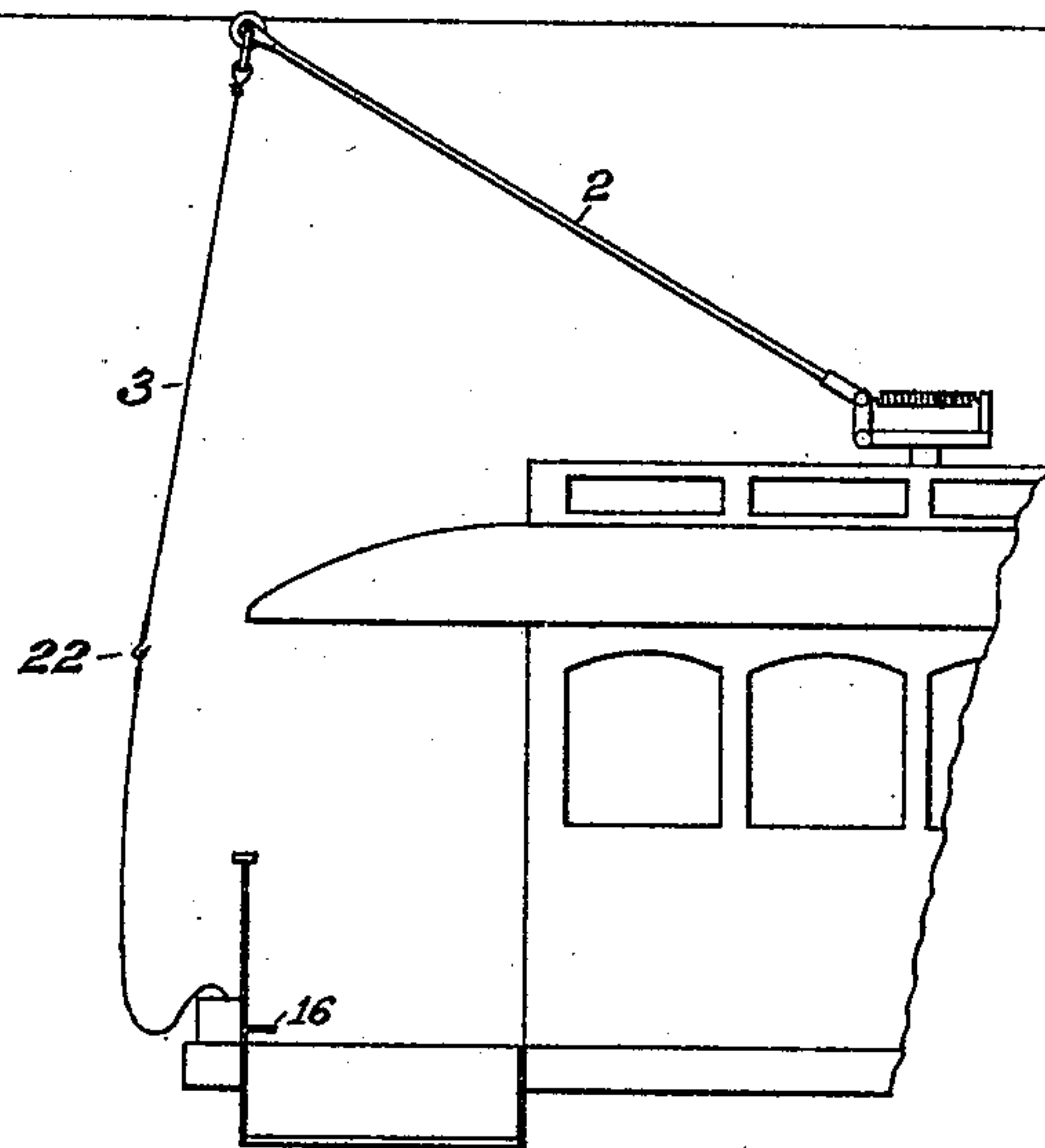


Fig. 1.

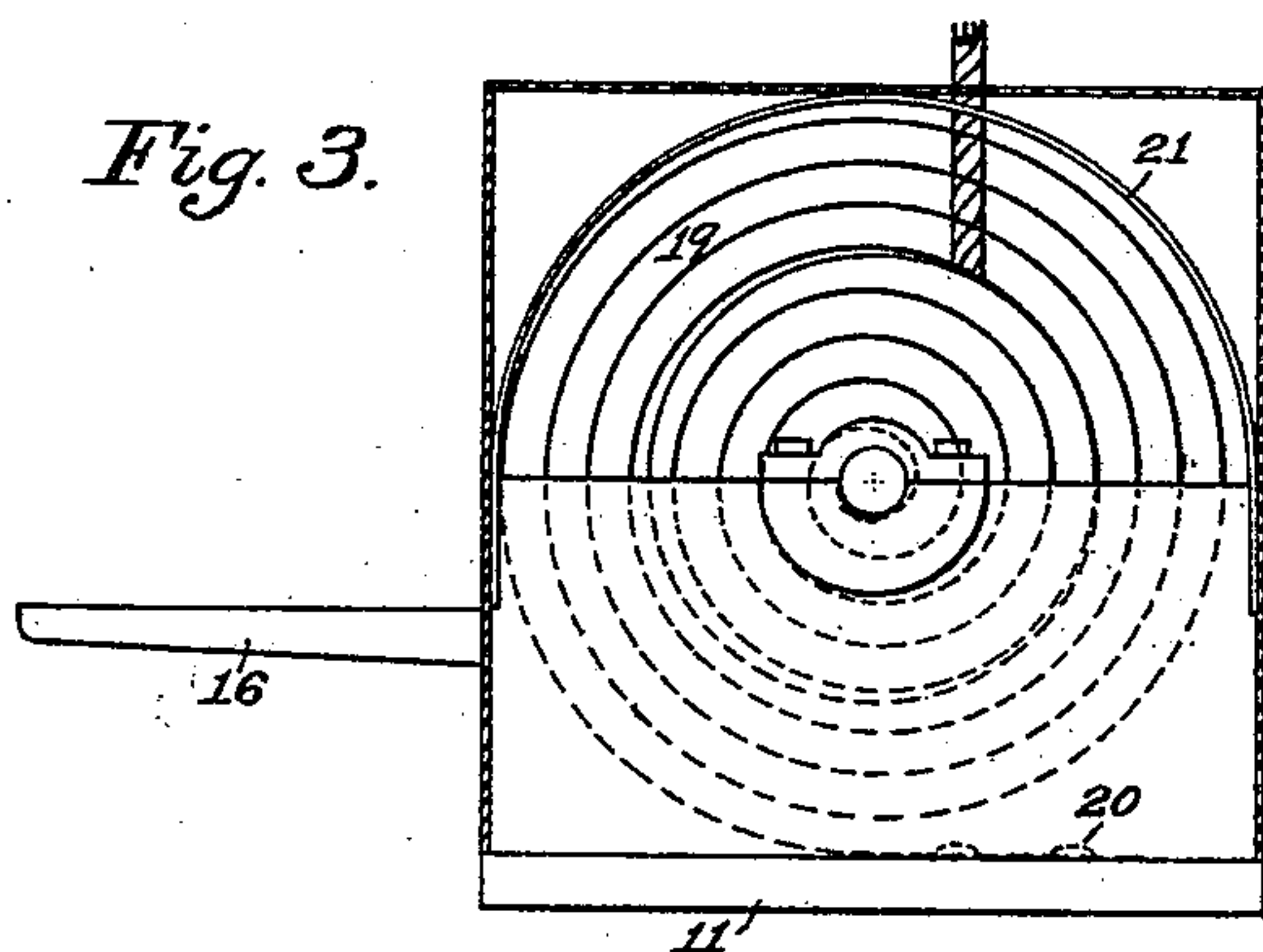


Fig. 3.

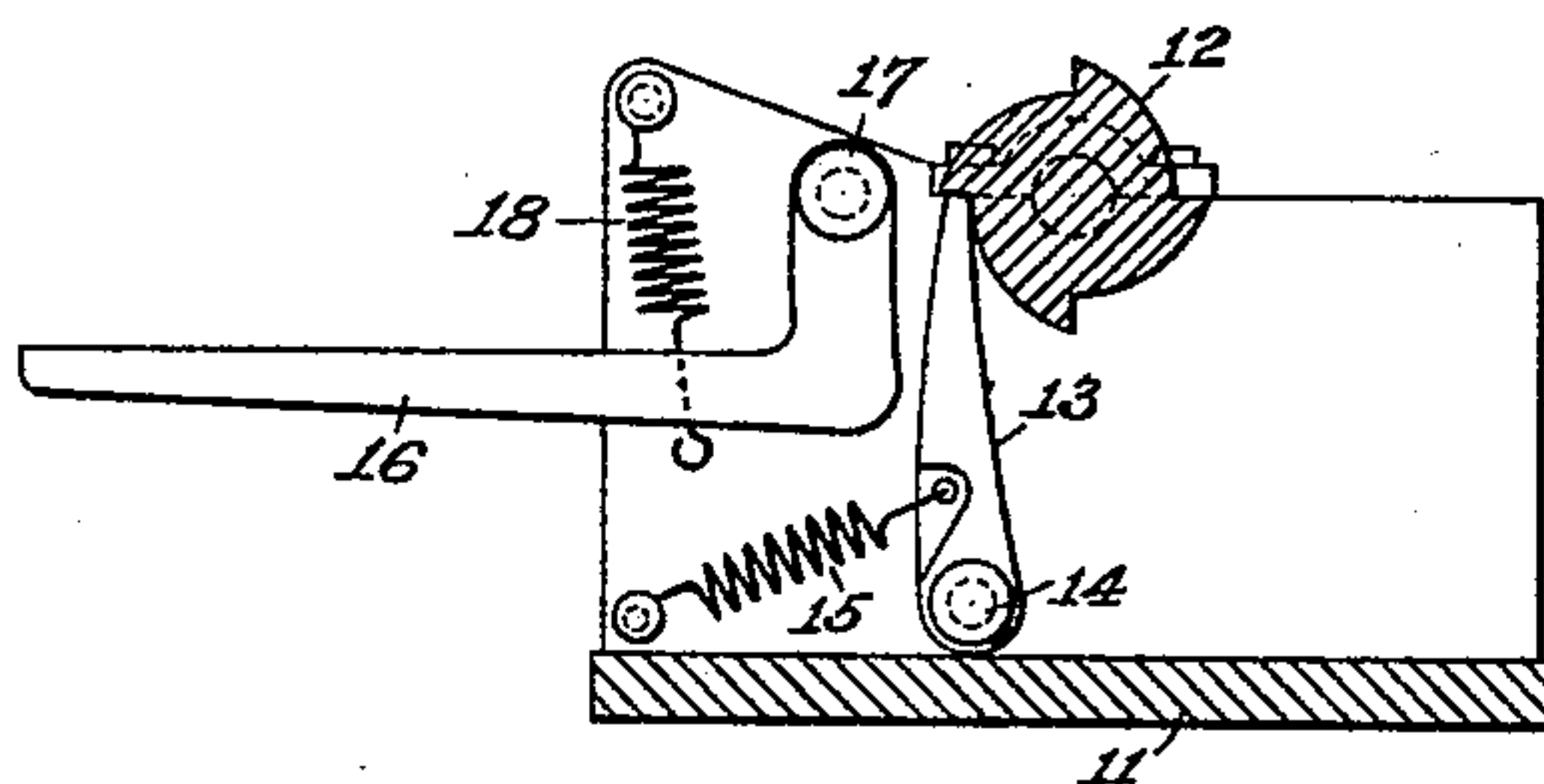
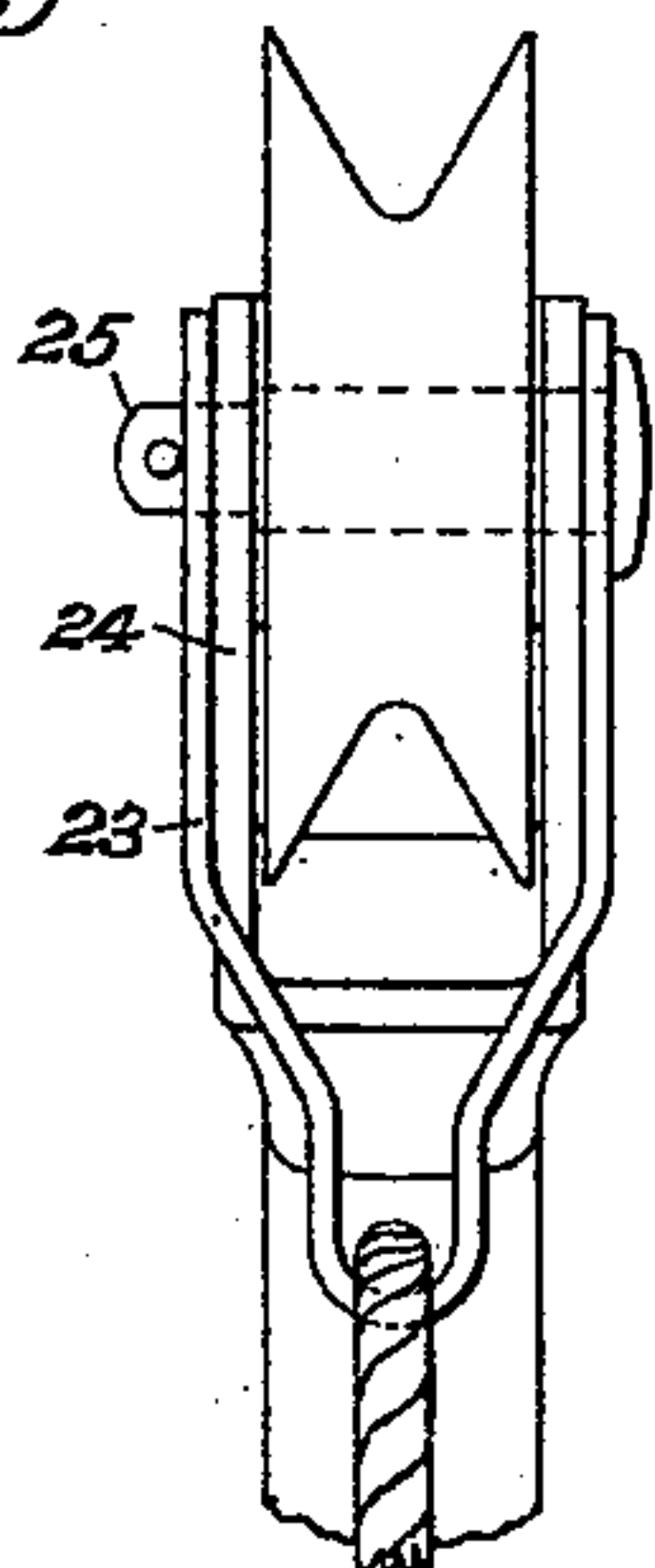


Fig. 4.

Fig. 5.



WITNESSES

David B. Carpenter  
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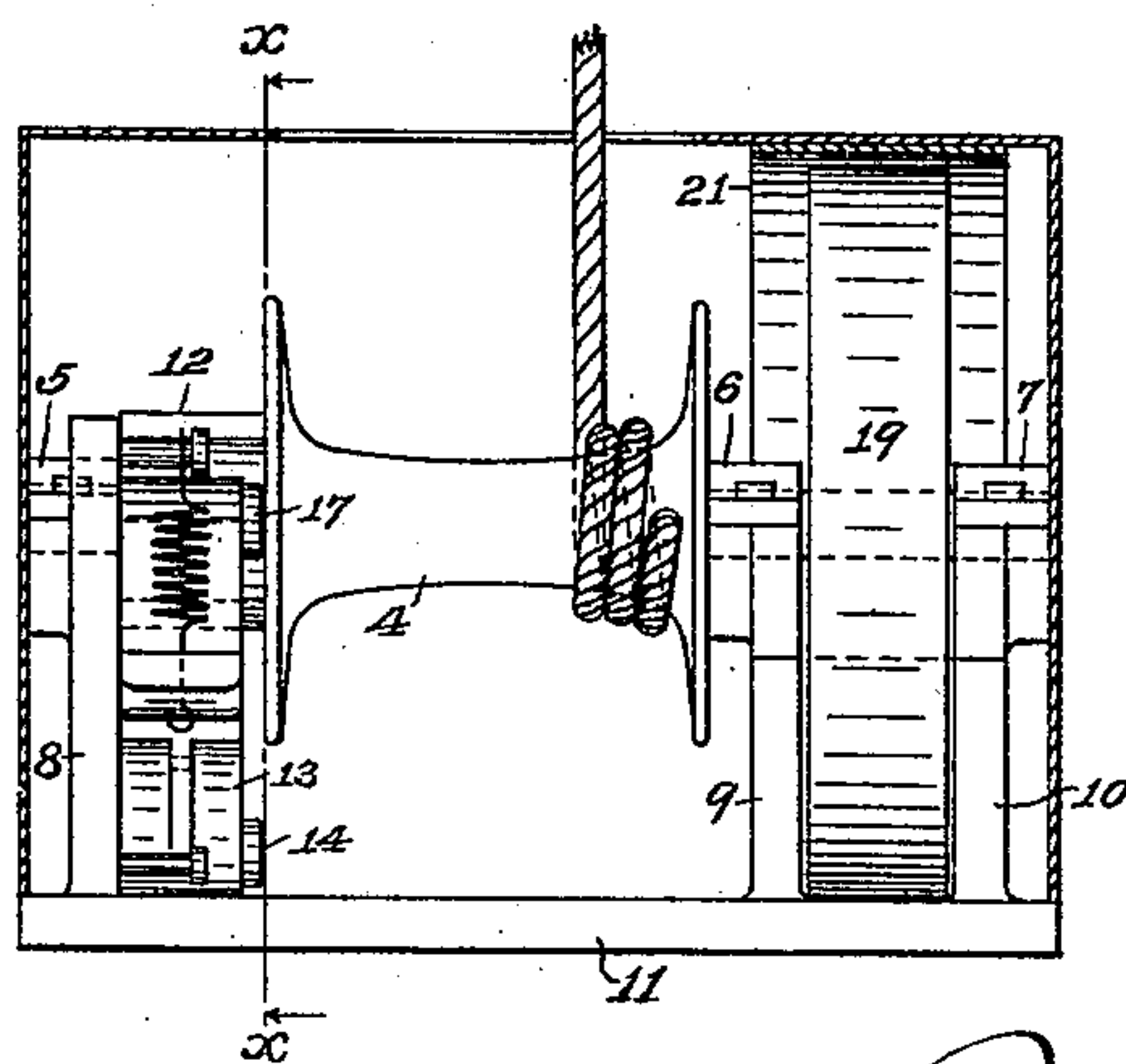


Fig. 2.

INVENTOR

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# UNITED STATES PATENT OFFICE.

ROSWELL I. KROFT, OF AVON LAKE, OHIO, ASSIGNOR OF ONE-HALF TO  
ANTHONY W. KROFT, OF CLEVELAND, OHIO.

## TROLLEY-CATCHER.

SPECIFICATION forming part of Letters Patent No. 621,422, dated March 21, 1899.

Application filed April 14, 1898. Serial No. 677,531. (No model.)

*To all whom it may concern:*

Be it known that I, ROSWELL I. KROFT, a citizen of the United States of America, and a resident of Avon Lake, in the county of Lorain and State of Ohio, have invented certain new and useful Improvements in Trolley-Catchers, of which the following is a specification.

My invention relates to trolley-catchers, and is designed to provide means for controlling the trolley-arm of an electric car and prevent it from fouling and wrecking the overhead system when the trolley-wheel becomes disengaged from the trolley-wire. It provides an attachment whereby the action of the tension-spring upon the trolley-arm is overcome after the trolley jumps the wire and the arm is drawn down and contact with the overhead system prevented until the operator shall again set the trolley in position upon the wire. It provides a simple and inexpensive means of controlling the arm, as hereinafter more fully described, and set forth in the claim.

The following is a full, clear, and exact description of my invention, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a broken side elevation of an electric car equipped with my improved device. Fig. 2 is a front elevation of my device; Fig. 3, an end view. Fig. 4 is a cross-section on the line X X of Fig. 2, showing a ratchet device; and Fig. 5 is a plan view of a trolley-guard employed.

In the drawings, 2 is the trolley-arm, and 3 the adjusting-rope. One end of the rope is attached to the trolley and the other end to the reel 4, carried upon trunnions journaled at 5, 6, and 7 in vertical plates 8, 9, and 10, attached to the base-plate 11. On one trunnion, between the reel 4 and the plate 8, a ratchet-wheel 12 is provided whose teeth are engaged by a pawl 13. This pawl may be pivoted upon a pin 14 and is provided with a spring 15, which tends to withdraw the pawl from the ratchet-wheel. A lever 16 is arranged to force the pawl into engagement, the said lever being pivoted at 17 and normally retracted by the spring 18. The lever 16 acts to overcome the action of the spring 15 and

cause the pawl to engage the ratchet when its long arm is depressed.

A winding spring 19 is employed to actuate the reel 4, one end of the said spring being attached to the longer trunnion and the other end to the base-plate by the pins 20. A circular guard limiting the expansion of the winding spring is provided, and the plates 9 and 10 and the circular guard 21 form the barrel inclosing the winding spring.

Assuming that the spring 19 is expanded to set the device, the adjusting-rope should be unsnapped at 22 and wound upon the reel 4. The rope is then withdrawn by draft on the free end and the revolution of the reel winds up the spring. When the tension on the spring 19 is sufficient to overcome the tension-spring of the trolley, the operator may place his foot upon the long arm of the lever 16, which will cause the pawl 13 to engage the ratchet 12. The operator then slacks up on the rope and the slightly-beveled shoulder of the ratchet will, under the tension of the spring 19, overcome the action of the spring 15 and hold the pawl in its engagement with the ratchet, preventing the revolution of the reel under the action of the winding spring and locking the reel in adjusted position. The rope may then be snapped together and the trolley set in position upon the wire.

When the trolley becomes disengaged from the wire, the tension-spring of the trolley will cause the arm to fly up and take up the slack in the adjusting-rope. As soon as the slack is taken up a sudden strain is brought upon the reel in opposition to the tension of the spring 19. The jerk or sudden strain caused by the rising trolley-arm trips the ratchet, the spring 15 acting to disengage the pawl as soon as the pressure of the spring 19 is relieved. The tripping of the ratchet is followed by a sudden revolution of the reel under the action of the spring 19, the rope being wound upon the reel and the trolley drawn down to a position of safety below the overhead system.

To prevent the fouling of the trolley fork or wheel with the overhead wire when the trolley-wheel is drawn down from a position above the trolley-wire, a V-shaped guard 23 is employed. The guard is pivoted on the

trolley-pin 25 and on the outside of the trolley-fork 24, as shown in Fig. 5.

It is obvious that the pull of the spring 19 may be adjusted as the strength of the tension-spring of the trolley may require. The arrangement of the winding spring, size of the reel, the locking mechanism, &c., may be varied and many other changes made in the form of the device without departing from my invention, since

I claim—

In trolley-catcher apparatus the combination with the trolley-arm, adjusting-rope and

spring-actuated reel having a ratchet and locking-pawl, of a trip-spring acting constantly to release the pawl held in its engagement with the ratchet by the pressure of the reel-spring, and a lever arranged to overcome the action of the trip-spring and force the pawl into engagement with the ratchet.

Signed by me, at Cleveland, Ohio, this 12th day of April, 1898.

ROSWELL I. KROFT.

Witnesses:

DAVID B. CARPENTER,  
ANTHONY W. KROFT.