No. 789,804. PATENTED MAY 16, 1905.

W. W. GEISER.

TROLLEY CATCHER AND RETRIEVER.

APPLICATION FILED DEC. 19, 1903.

2 SHEETS—SHEET 1.

Fig. 2.

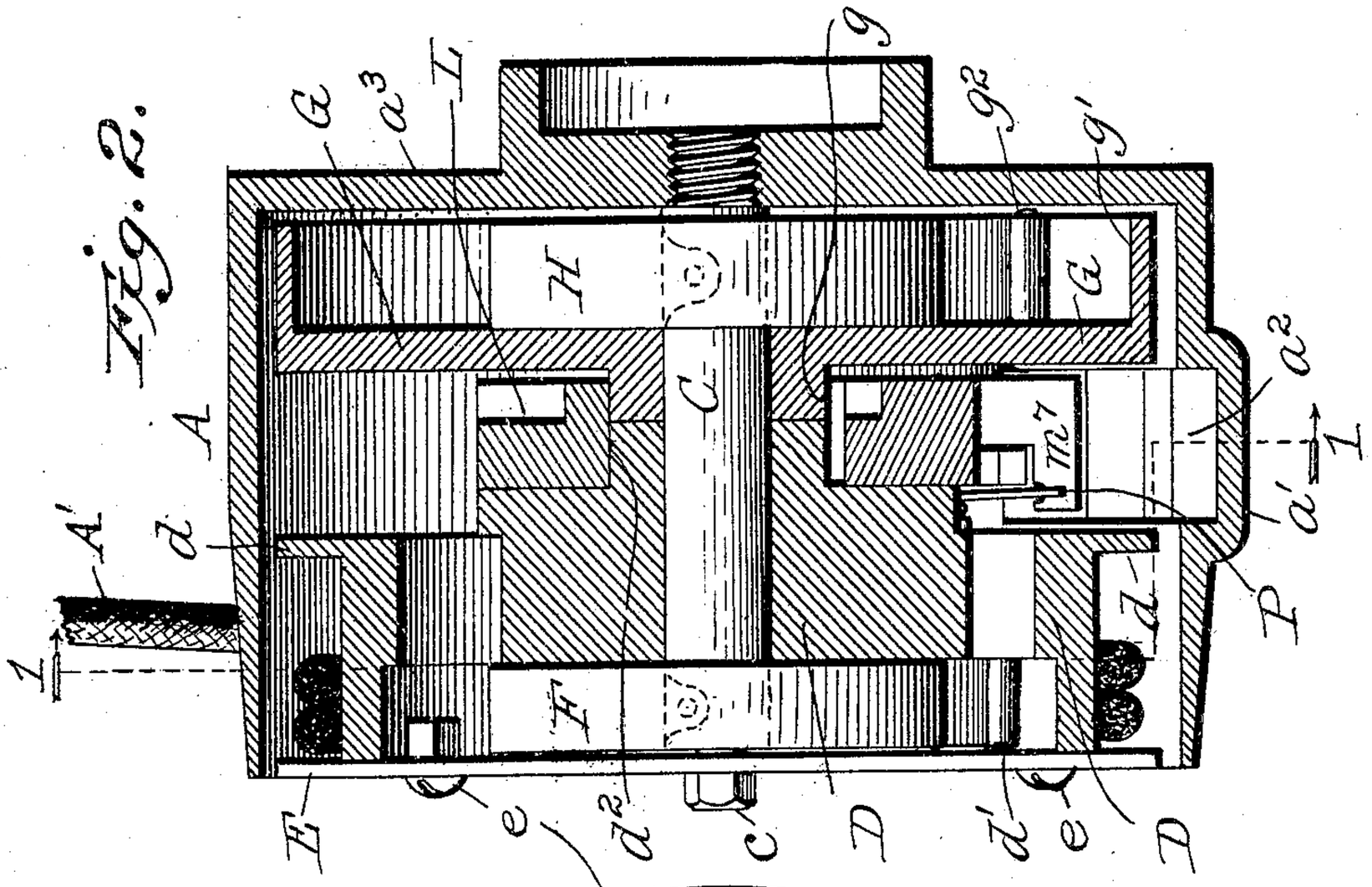
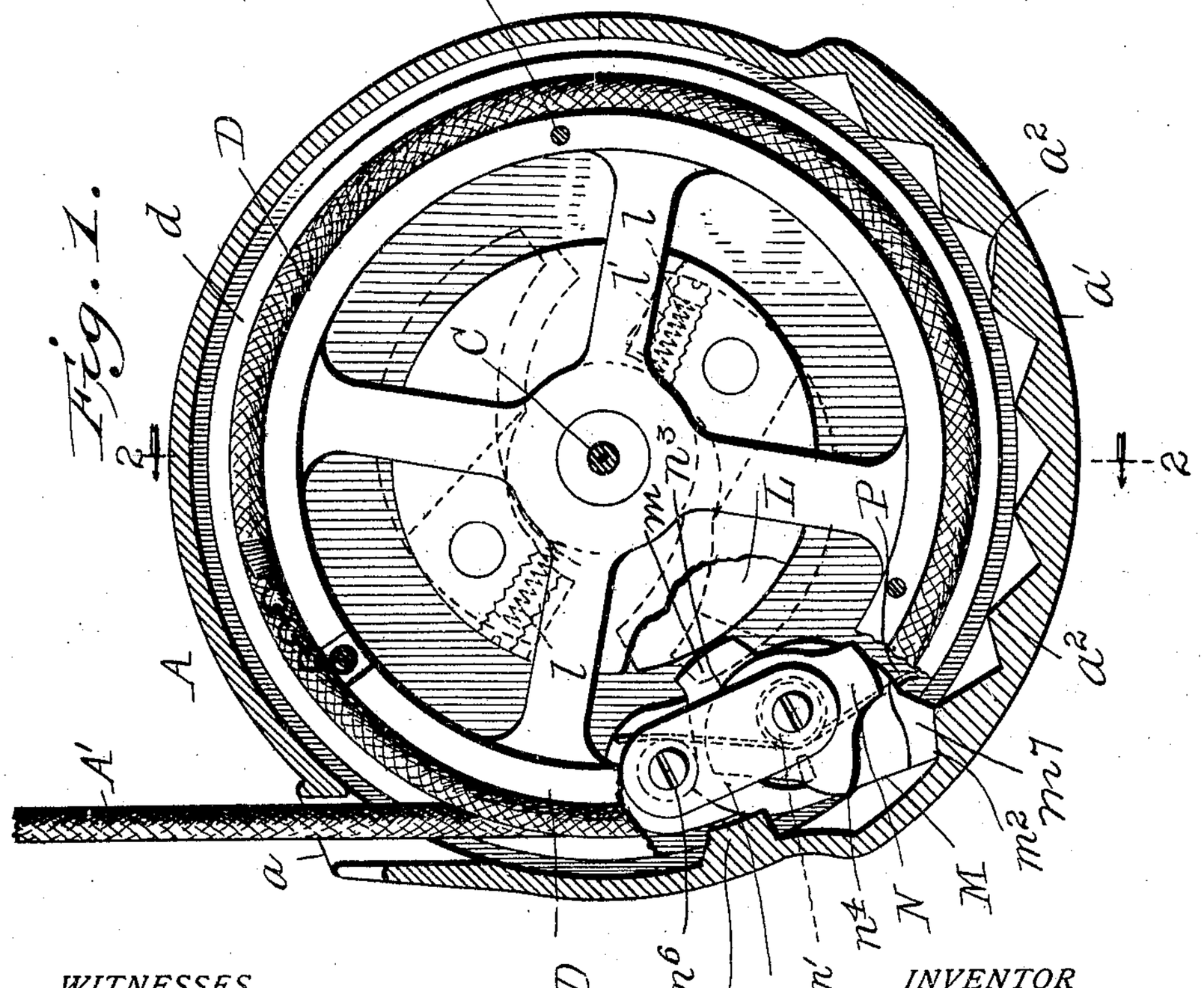


Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 5.

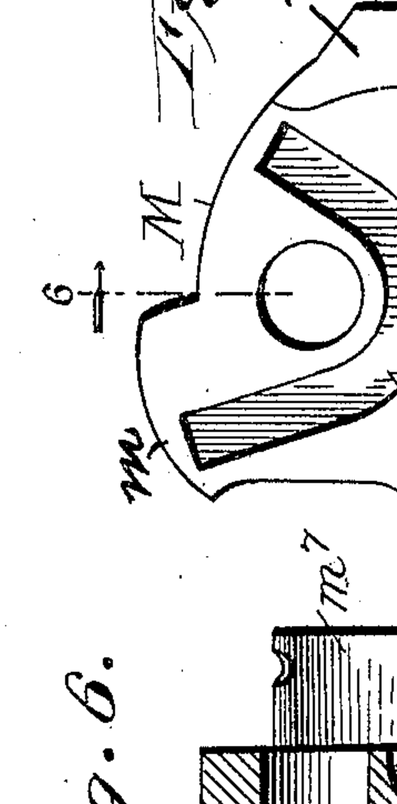


Fig. 6.

Fig. 7.

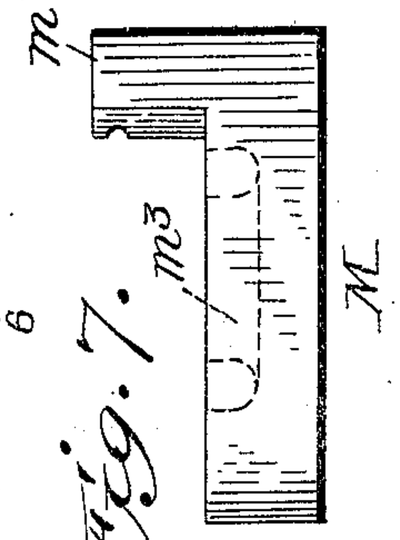


Fig. 8.

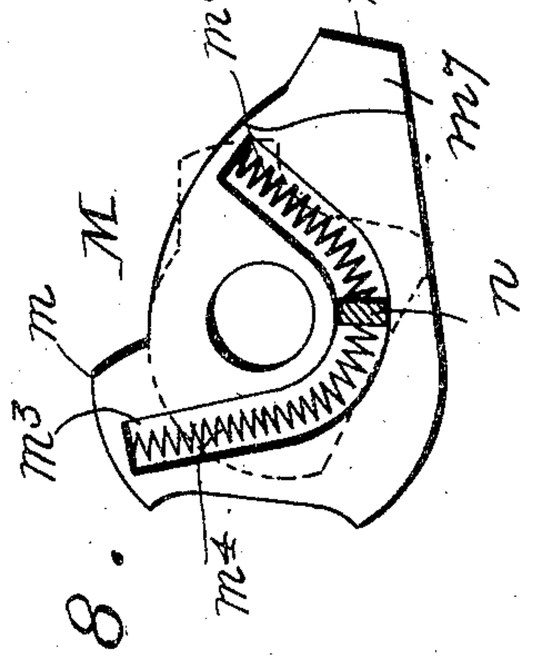


Fig. 9.

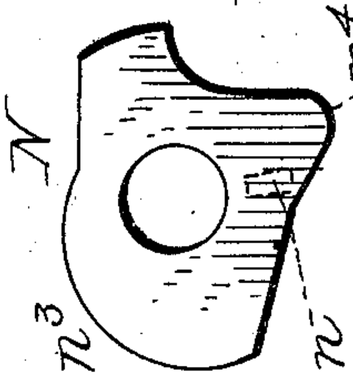


Fig. 10.

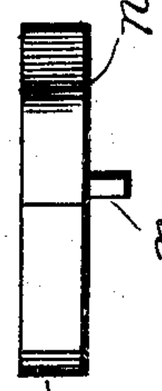


Fig. 11.

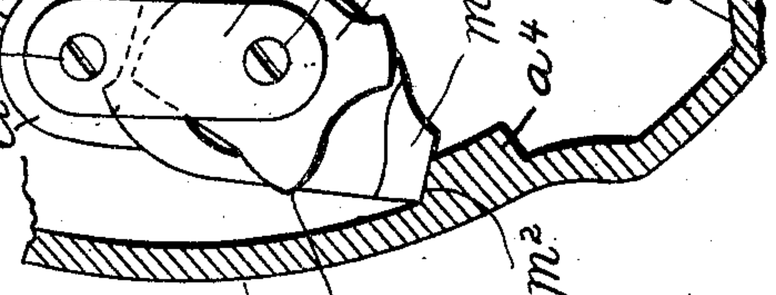


Fig. 12.

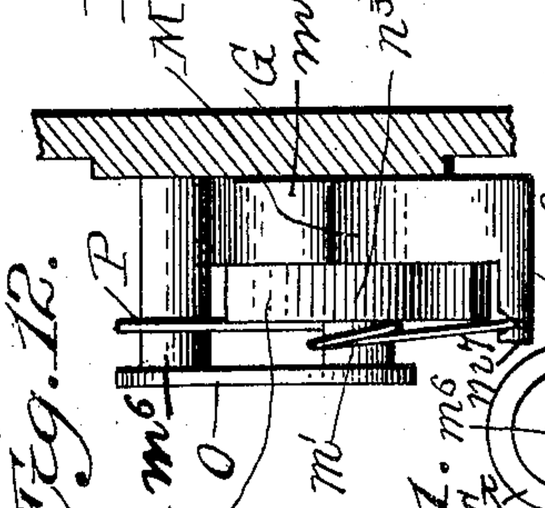
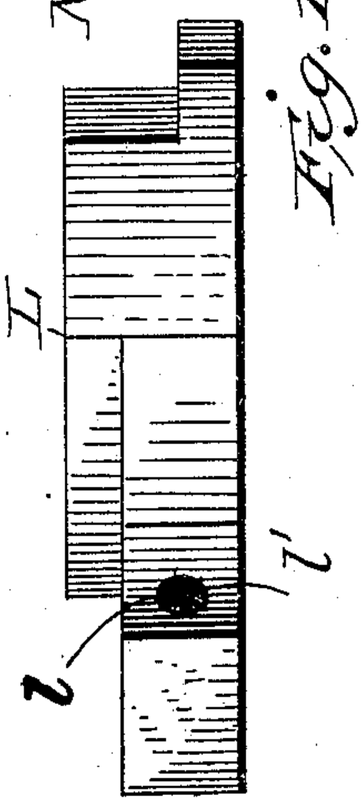


Fig. 4.



WITNESSES

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No. 789,804. Patented May 16, 1905.

UNITED STATES PATENT OFFICE.

WALTER W. GEISER, OF ALTOONA, PENNSYLVANIA.

TROLLEY CATCHER AND RETRIEVER.

SPECIFICATION forming part of Letters Patent No. 789,804, dated May 16, 1905.

Application filed December 19, 1903. Serial No. 185,816.

To all whom it may concern:

Be it known that I, WALTER W. GEISER, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Trolley Catchers and Retrievers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to devices for catching and retrieving trolleys for electric cars which use the overhead system; and it has for its object to provide a simple, durable, and comparatively inexpensive device of few parts adapted to retain the trolley-rope taut and to catch and retrieve the trolley in the event of its leaving the wire, and thereby prevent the same coming in contact with the wire-supporting devices; and it consists of the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal vertical section on the line 1 1, Fig. 2, looking in the direction of the arrows, the spring of the rope-reel being omitted and the inner face of the latter being broken away to show one of the pawls in position with its outer edge in contact with a spur on the dog. Fig. 2 is a transverse vertical section on the line 2 2, Fig. 1, looking in the direction of the arrows. Fig. 3 is a detail side elevation of one of the pawls. Fig. 4 is a detail edge elevation of the same. Fig. 5 is a detail side elevation of the dog. Fig. 6 is a detail vertical section on the line 6 6, Fig. 5, looking in the direction of the arrows. Fig. 7 is an edge elevation of the dog. Fig. 8 is a side elevation of the dog, showing the springs in position and the tripping-plate in dotted lines. Fig. 9 is a detail side elevation, and Fig. 10 an edge view, of the tripping-plate, respectively. Fig. 11 is a side elevation showing the locking and releasing device in its upper position, and Fig. 12 an edge view of locking and releasing device removed from the casing.

Similar letters refer to similar parts throughout all the views.

Referring to the drawings, A represents an approximately cylindrical casing open at one end to receive the operative mechanism and is formed with an opening a in its periphery for the passage of the trolley-rope A′. A section of the casing is thickened in order to form a rib a', which provides for the formation of the teeth a^2 without unduly weakening the casing, said teeth being formed on the interior or inner face of said rib with their edges on a line concentric with the stud-shaft C.

The stud-shaft C is firmly secured to the head a^3 of the casing by screwing into a threaded opening formed centrally in the said head or by any other suitable or preferred means, so as to hold the same rigidly at right angles to said head. The shaft C sustains the various working parts of the device in their operative positions. On the outer or free end of the shaft C is loosely mounted a reel D, having a peripheral flange d, which serves to prevent the trolley-rope which is wound on said reel from working off at one side, while a plate E, which is bolted or secured by screws e to the edge of the reel, forms a flange which serves a similar purpose at the other side. The plate E is of less diameter than the casing and works freely in the open end thereof, and a bolt c extends through a central opening in said plate and enters the end of the shaft C, and thereby serves to prevent all the parts mounted on said shaft from moving longitudinally thereon, but permitting of the free rotation of such parts. Between the reel and the plate E a coiled spring F is arranged, one end of which is secured to said shaft and the other end to a pin d', projecting from the reel, the purpose of which is to rotate or turn said reel, so as to wind the trolley-rope thereon in order to take up the slack thereof. This spring is of sufficient strength to take up the slack of the rope, but is not strong enough to move the trolley-pole. The reel D, as clearly shown in Fig. 2, is formed with a hub d^2, which abuts loosely against a similar hub g on a flanged disk G, mounted loosely on said shaft with its flange g' projecting toward the head of the casing. Arranged within the flange of disk G and surrounding the shaft C is a coiled spring H, of a strength sufficient to overcome the

strength of the springs used to hold up the trolley-pole, said spring H being secured at one end to a pin g^2, projecting from the face of the disk G, and its other end to the shaft C, so as to rotate the disk G when permitted so to do, as will be hereinafter described.

In the space between the disk G and the reel D is arranged the locking and releasing device, which consists of the pawls L, pivotally secured to the inner face of the reel, and when in their normal position resting on the hubs d^2 and g, as clearly shown in Fig. 2. The pawls are held in the position described when the mechanism is at rest by springs l, seated in pockets l' in the short arms of the pawls and pressing against the hub d^2, as best shown in dotted lines, Fig. 1. When the reel is rotated, the pawls are thrown out by centrifugal force, so that one of them will engage a spur or lug m on a dog M, which is loosely hung on a pin or stud-shaft m', projecting from the outer face of the disk G, and thus tilt or turn said dog, so as to disengage its point m^2 from that one of the teeth a^2 of the casing with which it is in contact, and thereby permit the spring H to expand and impart a quick and rapid revolution to the disk and reel, and thus wind the trolley-rope on the reel and draw down the trolley-pole. The disk and reel are arrested by a lug or stop a^4, projecting from the casing into the path of the point m^2 at a point at a slight distance above their starting-point. The dog, as clearly shown in Figs. 5 and 8, is formed with a bent or curved groove m^3 in its side face to receive the springs m^4 m^5, and mounted loosely on said stud-shaft m' is a tripping-plate N, from which projects a short lug n, which enters the groove m^3 and lies between the adjacent ends of the springs m^4 m^5. A plate O is bolted to the pin or stud-shaft m' and to a similar stud m^6, so as to retain the dog and trip-plate in place. A spring P is bent around the stud m' and one of its ends engages a notch formed in the lateral projection m^7 of the dog and the other end engages the stud m^6 for the purpose of normally holding the point of dog M out or in engagement with one of the teeth a^2.

The tripping-plate N is formed with a cam-surface n^3, the purpose of which is to engage the extended ends of the pawls L and throw the pawl with which it engages out of engagement with the dog, thus permitting the dog to be thrown outward by the springs P and into position to again engage one of the teeth a^2. This is accomplished by the operator pulling on the trolley-rope in a direction to unwind the same from the reel until the lug or projection n^4 on the tripping-plate strikes against the lug or stop a^4 and the plate is turned on its stud, the projection n^4 sliding past said stop a^4 and being thrown against the upper face of the stop. The operator then releases the rope and the spring H acts to rotate or turn the reel and disk in the opposite direction and causing the tripping-plate to turn on its stud and its cam-surface to engage and move inwardly the pawl L, thus releasing the dog therefrom and permitting its spring P to throw its point into position to engage one of the teeth a^2, and thus arrest further movement of the disk.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A trolley catcher and retriever, comprising a casing having projections, a trolley-rope reel mounted in said casing, a spring for rotating said reel, a rotatable member mounted adjacent said reel, a spring for rotating said member, a dog pivoted to said rotatable member and engaging the projections for locking said rotatable member against rotation, and centrifugally-operated pawls pivoted to the reel for locking said reel to said projections, and means for releasing said dog to permit of rotation of said member.

2. A trolley catcher and retriever, comprising a casing having projections, a trolley-rope reel mounted in said casing, a spring for rotating said reel, centrifugally-acting pawls carried by said reel, a spring-operated rotatable member mounted adjacent said reel, a dog pivoted to said rotatable member and engaging the projections for locking said member against rotation and a tripping-plate adapted to be operated by said pawls to release said member.

3. A trolley catcher and retriever, comprising a casing having a series of teeth formed thereon, a reel mounted in said casing for the trolley-rope, a spring for operating said reel, centrifugally-operating pawls carried by said reel, a spring-operated rotatable disk, a dog for engaging the casing-teeth carried by said disk, a tripping-plate for releasing said pawls to permit of their return to normal positions, and a projection for tripping said plate.

4. A trolley catcher and retriever, comprising a casing, a spring-operated reel and a spring-operated disk arranged in said casing, pawls pivotally secured to said reel, a dog pivotally mounted on said disk, a pivoted tripping-plate for engaging said pawls to release them, and springs for returning said tripping-plate to its normal position.

5. A trolley catcher and retriever, comprising a casing, a series of teeth formed on said casing, a spring-operated trolley-rope reel, a spring-operated disk, pawls pivotally secured to said reel, a dog for engaging the casing-teeth, a tripping-plate for moving said pawls out of engagement with said dog, and means for tripping said plate.

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

WALTER W. GEISER.

Witnesses:
H. C. REED,
SAMUEL STENGER.