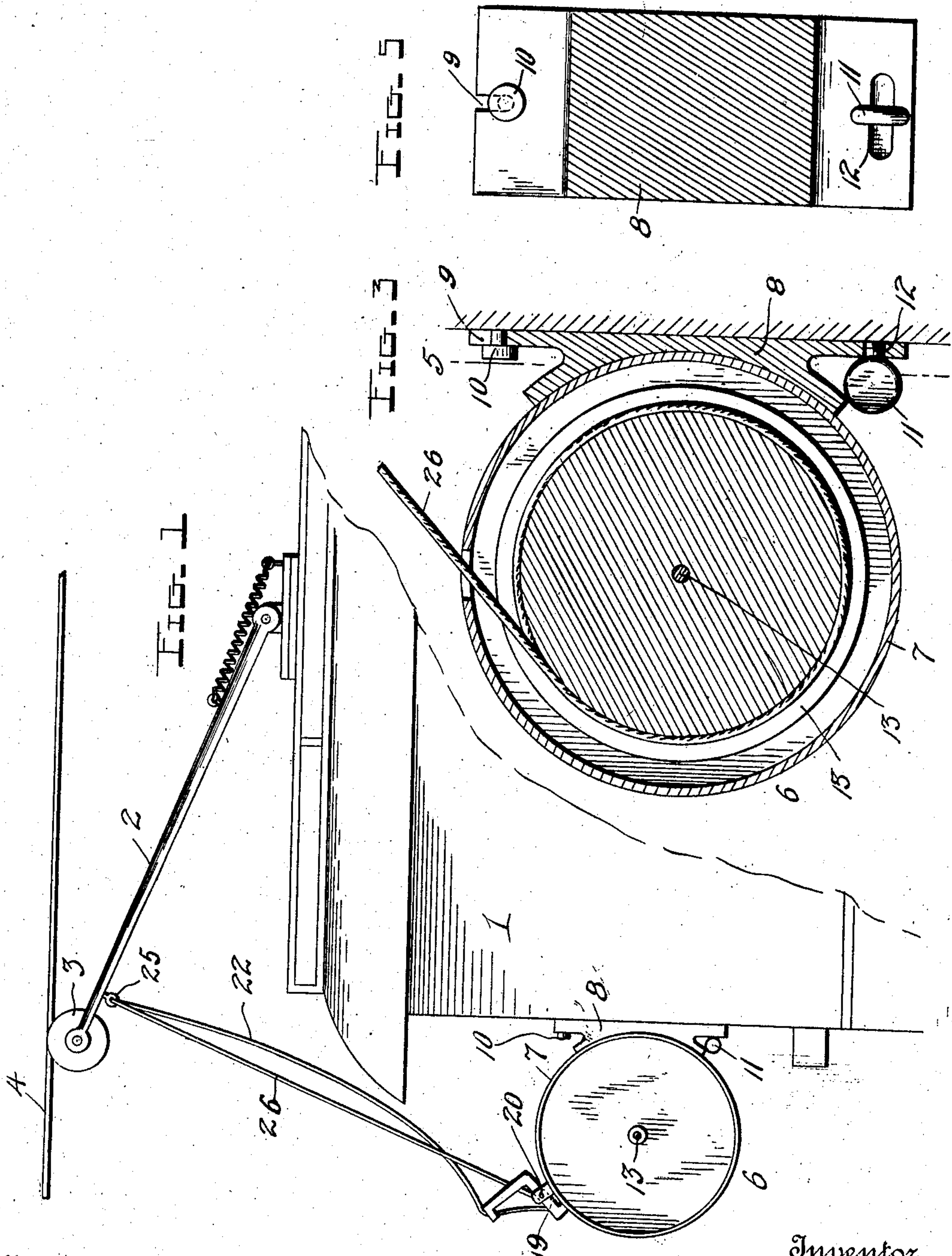


No. 827,344.

PATENTED JULY 31, 1906.

T. BLIXT.
TROLLEY RETRIEVER.
APPLICATION FILED JULY 3, 1906.

2 SHEETS—SHEET 1.



Witnesses
J. A. Grisbauer, Jr.
J. A. Grisbauer.

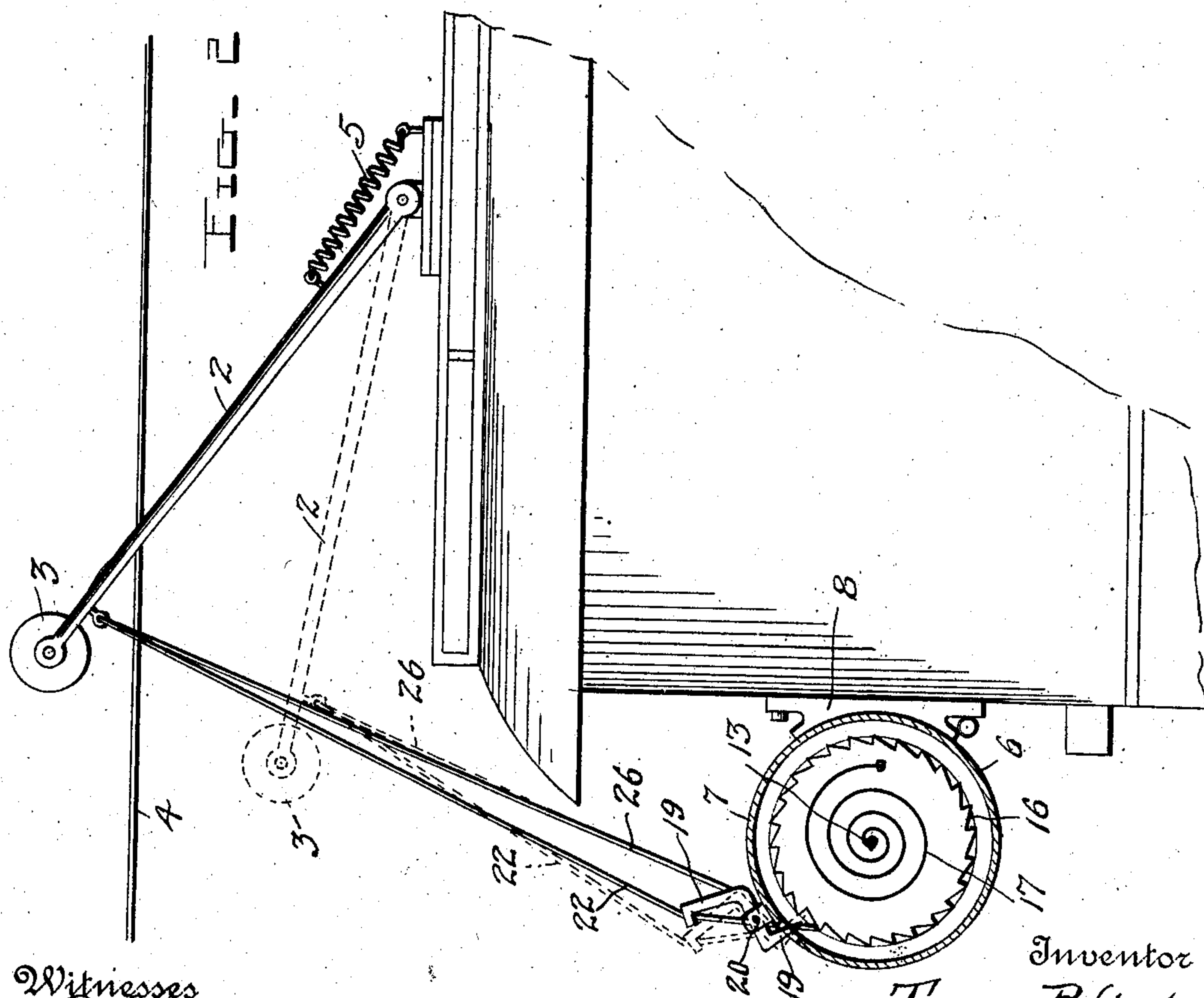
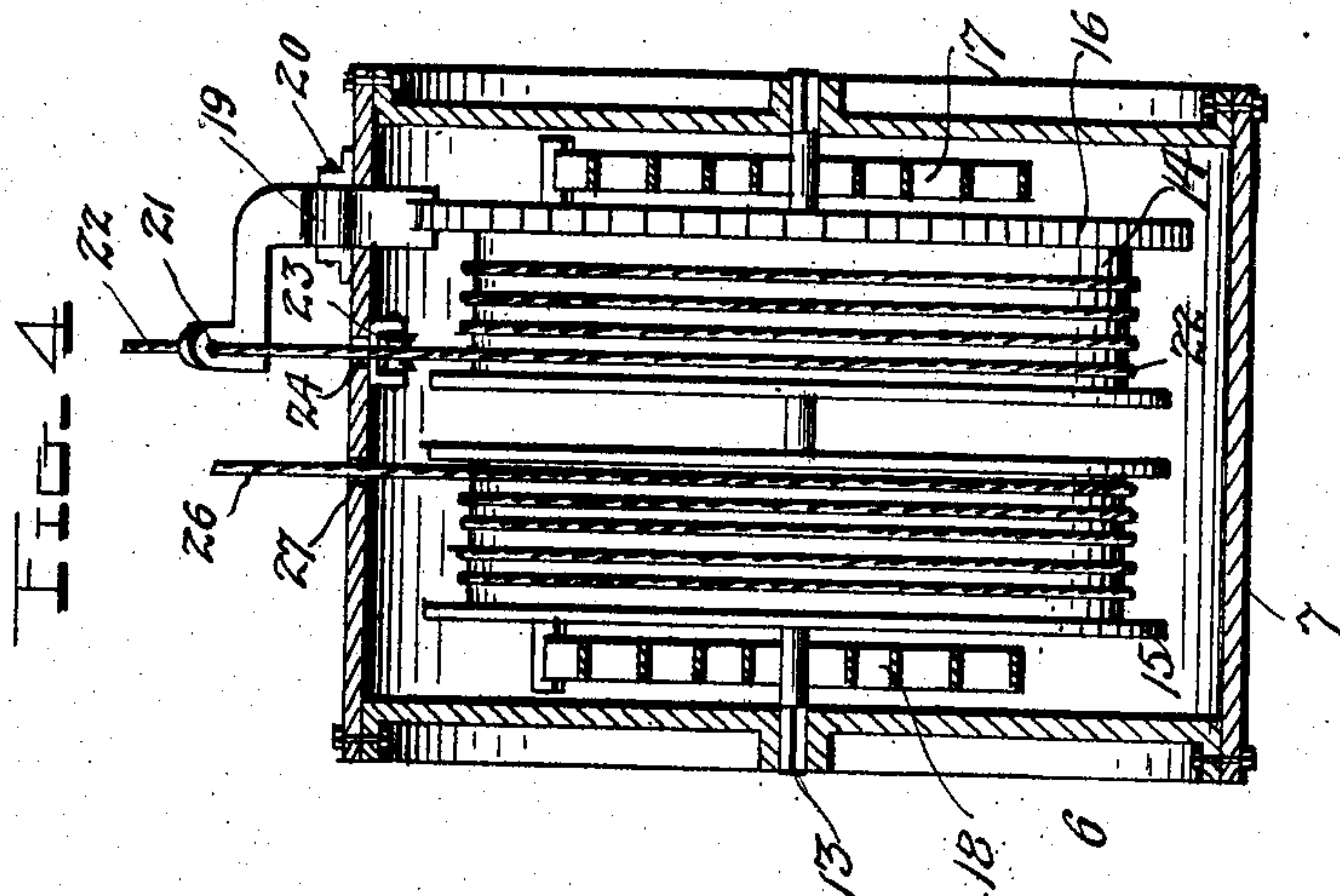
Inventor
Terry Blixt
by *A. B. Wilson*
Attorney

No. 827,344.

PATENTED JULY 31, 1906.

T. BLIXT.
TROLLEY RETRIEVER.
APPLICATION FILED JULY 3, 1905.

2 SHEETS—SHEET 2.



Witnesses
J. H. Griesbauer, Jr.
L. H. Griesbauer.

Inventor
Terry Blixt
by *A. B. Wilson*
Attorney

UNITED STATES PATENT OFFICE.

TERRY BLIXT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO WALTER FOSTER, OF PITTSBURG, PENNSYLVANIA.

TROLLEY-RETRIEVER.

No. 827,344.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed July 3, 1905. Serial No. 268,140.

To all whom it may concern:

Be it known that I, TERRY BLIXT, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Trolley-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.

My invention relates to improvements in trolley-retrievers, and more particularly to a device whereby when the trolley-wheel jumps a trolley-wire the pole will be automatically lowered to prevent it from striking and injuring the hangers or connections which support the trolley-wire.

The object of the invention is to provide a simple and durable device of this character which will be efficient in operation and well adapted for the purpose intended.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts as will be hereinafter more fully described, and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a side elevation of the rear portion of a car, showing my improvements applied to the trolley-pole of the same. Fig. 2 is a similar view of the same, with parts in section, showing in full lines the position of the parts when the trolley-wheel jumps the trolley-wire, and thereby releasing the lowering device, and in dotted lines the position of the parts when lowered by said device. Fig. 3 is a detail sectional view, on an enlarged scale, through the drum containing the winding mechanism. Fig. 4 is a transverse sectional view through the same, and Fig. 5 is a detail sectional view taken on the line 5 5 in Fig. 3.

Referring to the drawings by numeral, 1 denotes the back end or portion of an electric-railway car upon which is mounted the usual trolley-pole 2, carrying the trolley-wheel 3, which runs upon the trolley-wire 4 and is held in contact therewith by the usual spring or springs 5, the pole being pivotally mounted upon a suitable base and the spring being in the form of a coil with one of its ends connected to said pole and its other end connected to said base. The latter is also pivotally

mounted, so that the pole may be inclined in either direction, according to the direction of movement of the car.

In order to automatically lower the trolley-pole 2 when its wheel 3 jumps from the wire 4, I provide a device 6, which may be detachably mounted at either end of the car. This device comprises a drum or casing 7, secured to a base 8, which may be detachably mounted at either end of the car by engaging a notch 9 in one of its ends with a headed pin or stud 10 upon one end of the car and by clamping the other end of said base by means of a screw 11, which extends through a slot or opening formed in said end of the base, as clearly shown in Figs. 3 and 5 of the drawings. Said screw 11 has a flattened outer end which may be passed through the slot 12 when turned into alinement therewith, but which when turned transversely is adapted to hold the base 8 upon the car, as will be readily understood. Extending concentrically through the cylindrical drum 7 and secured in its ends or heads is a shaft 13, upon which are loosely mounted two winding-drums 14 15. The drum 14 has formed or secured upon one of its sides or flanges a ratchet-wheel 16 and is adapted to be rotated or actuated in one direction by a coil-spring 17, which has one of its ends secured to said ratchet or drum and its opposite end secured to the shaft 13. The other drum 15 is adapted to be rotated in one direction by a coil-spring 18, which has one of its ends secured to the shaft 14 and its other end secured to said drum, as clearly shown in Fig. 4.

The ratchet-wheel 16 is adapted to be held against rotation under the action of the spring 17 by means of a pawl 19, which is pivotally mounted, as shown at 20, upon the outside of the drum 7, and which has one of its ends projecting through a slot or opening formed in said drum and engaged with the teeth of said ratchet-wheel. The opposite end of said pawl is slightly offset and formed with an aperture or opening 21, through which extends a rope or other flexible connection 22. The latter has one of its ends secured and wound upon the drum 14 and passes over a guide-pulley 23, disposed in a slot or opening 24, formed in the drum, to permit the rope 22 to pass therethrough. The opposite end of the rope 22 is attached to a loop or bail 25, secured upon the upper

portion of the trolley-pole 2. Connected to said loop or bail 25 is one end of a cord or other flexible connection 26, the opposite end of which is secured to and wound upon the drum 15, said cord passing through an opening 27, formed in the drum. The spring 18 is adapted to rotate the drum 15 to wind the cord 26 thereon and holds said cord at all times taut, but owing to the fact that the spring 18 is weaker than the spring 5 the latter will hold the trolley-wheel upon the trolley-wire. The tension upon the pole 2 being thus balanced will serve to keep the wheel 3 upon the wire 4. The spring 17 exerts its energy to wind the cord 22 upon the drum 14 when it is permitted to do so, by reason of its disengagement of the pawl 19 from the teeth of the ratchet-wheel 16, and said spring 17 is of greater strength than the spring 5, so that as soon as the trolley-wheel jumps the wire 4 and the pole 2 swings upwardly a predetermined distance, or a distance sufficient to cause the cord 22 to move the pawl out of its normal engagement with the ratchet-teeth 16, the drum 14 will be rotated by the spring 17 to wind up the cord 22 and lower the pole 2 against the tension of the spring 5.

The operation of the device is as follows:
 When the parts are in their normal position, (shown in Fig. 1,) the spring 5 will hold the trolley-wheel upon the trolley-wire, and the cord 26 will be held taut by the action of the spring 18, the cord 22 being slightly slack and the pawl 19 being engaged with the ratchet-wheel 16 to prevent the rotation of the drum 14 under the action of its spring 17. As soon as the trolley-wheel leaves the wire and moves to the dotted-line position (shown in Fig. 2) the tension upon the cord 22 will cause the pawl 19 to be swung to disengage the ratchet-wheel 16, thereby permitting the

spring 17 to rotate the drum 14 and wind the cord 22 thereon, the trolley-pole being thus lowered a sufficient distance to prevent it from striking any of the hangers or connections which support the trolley-wire 4. When the trolley-pole 2 is swung in the opposite direction from that shown in the drawings, the casing 6 of the device is applied to the opposite end of the car, as will be understood.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

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

The herein-described yieldingly-supported trolley-retriever consisting of a casing 6 provided with a base 8, said base having an open slot 9 at one end and a transverse slot 12 at the opposite end to engage the pin 10 and the turn-button 11, a shaft extending through said casing, a spring-actuated winding-drum loosely mounted upon said shaft, a ratchet-wheel carried by said drum, an offset-pawl 19 pivoted upon said casing and having one of its ends apertured and its opposite end extending through an opening in the casing and engaging said ratchet-wheel, and a cord passed through the aperture in said pawl and having one end wound upon said drum and its opposite end attached to the trolley-pole, essentially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

TERRY BLIXT.

Witnesses:

W. M. McCLURE,
H. H. WUNDERLICH.