

No. 711,286.

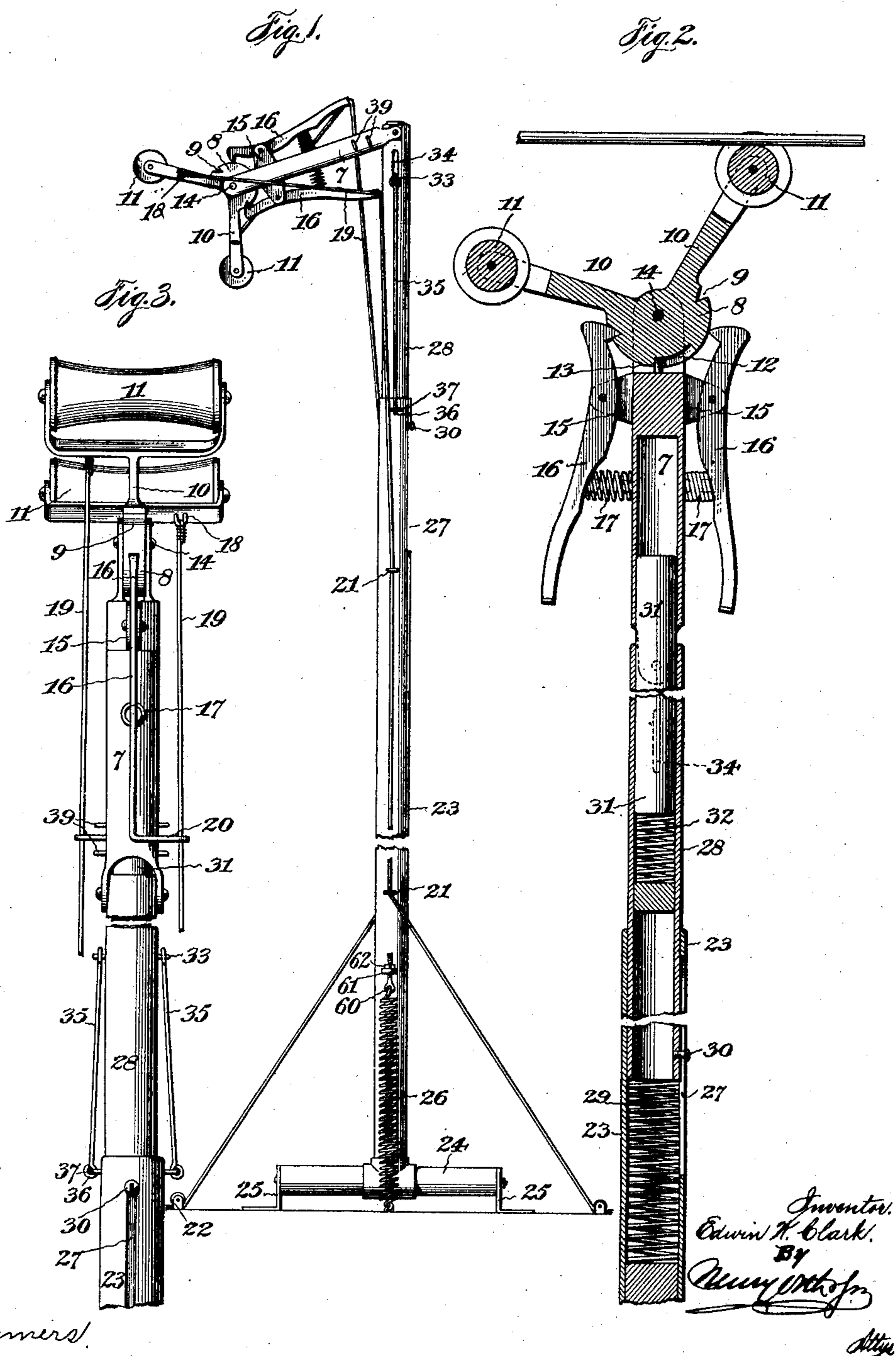
Patented Oct. 14, 1902.

E. W. CLARK.
TROLLEY.

(Application filed Apr. 9, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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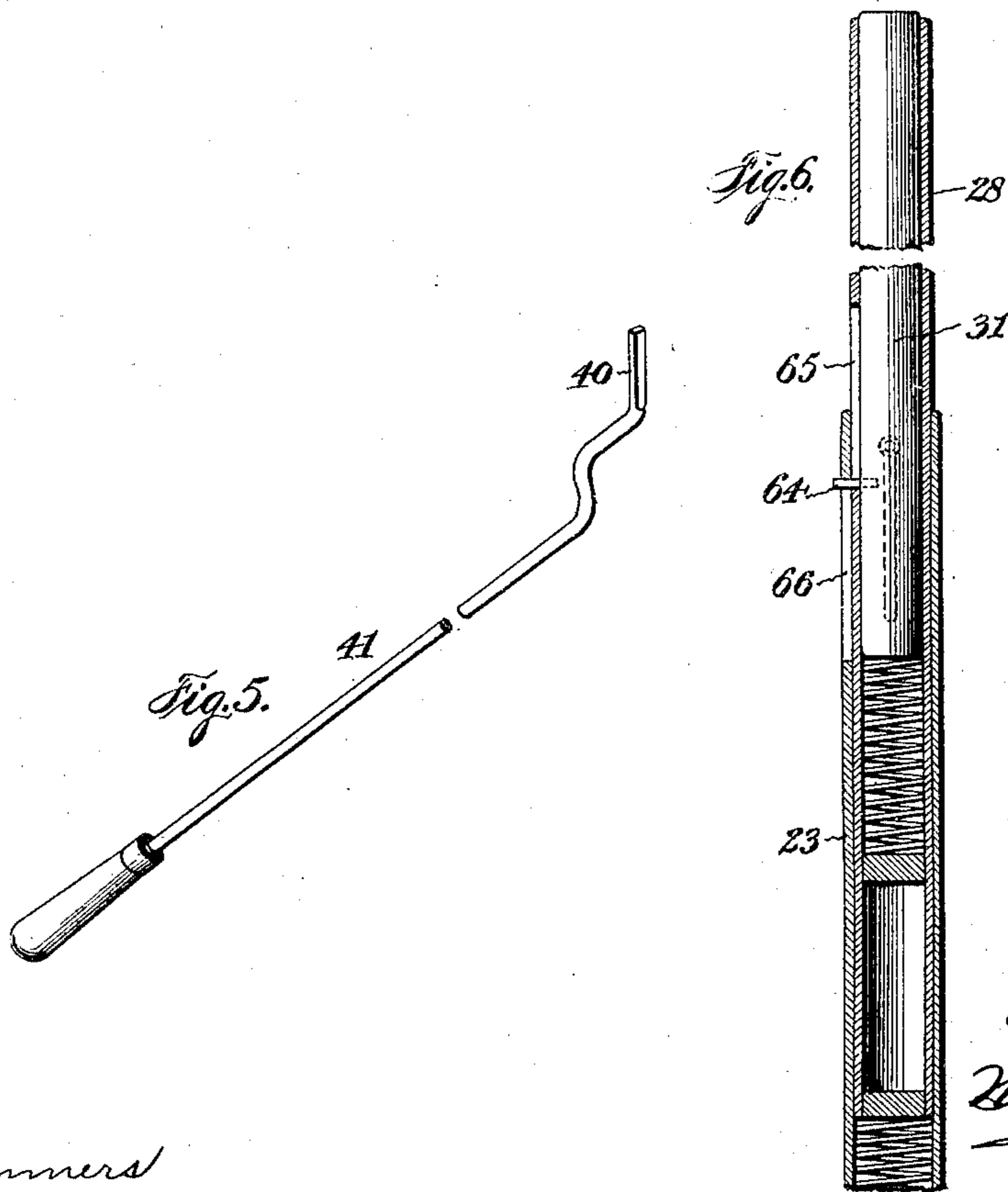
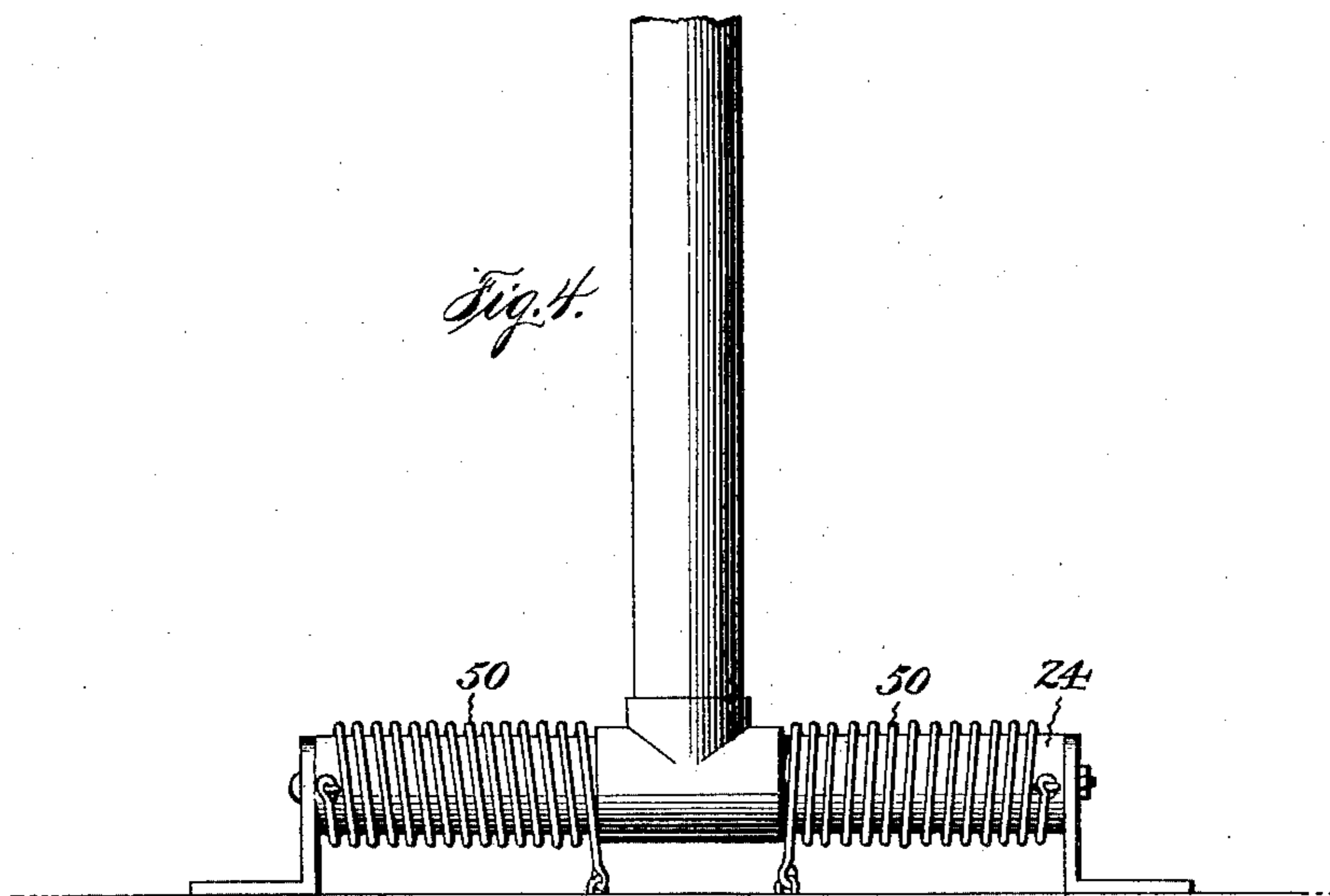
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

EDWIN W. CLARK, OF COLUMBUS, GEORGIA.

TROLLEY.

SPECIFICATION forming part of Letters Patent No. 711,286, dated October 14, 1902.

Application filed April 9, 1902. Serial No. 102,094. (No model.)

To all whom it may concern:

Be it known that I, EDWIN WALTER CLARK, a citizen of the United States of America, residing at Columbus, Georgia, have invented certain new and useful Improvements in Trolleys; and I do hereby 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

My invention relates to trolleys or moving current-collectors for overhead electrical railways, and has for its object the provision of means for causing the trolley to part contact with the wire as soon as the current-collector leaves it; and to this end it consists of a trolley-head hinged or otherwise suitably secured to the trolley-pole and held in position by means of a latch.

It has also for its object to bring into operation a second trolley-wheel when the direction of the movement of the car is reversed, and other novel features to be particularly described in the specification and pointed out in the claims.

Referring to the drawings, in which like parts are similarly designated, Figure 1 is a side view of the trolley having the head turned to one side and out of engagement with the wire. Fig. 2 is a partial sectional view having the head in operative position and one of the current-collectors engaging the wire. Fig. 3 is a side view of the trolley. Fig. 4 is a modification of the trolley-base. Fig. 5 is a hand-lever for raising the trolley-head into engagement of the wire should it have come off for any reason. Fig. 6 shows a modification of the means for operating the latch.

The trolley-head comprises a pole-section 7, preferably, but not necessarily, tubular, in the upper end of which is journaled a trolley-wheel carrier comprising a cam 8, having notches 9 at each end of its cam-surface and carrying forked arms 10, in which the trolley-wheels 11 are journaled. Between the notches 9 in the under face of the cam is a slot 12, into which takes a pin 13, fast on the end of

the pole-section 7, the object of which pin is to limit the rotation of the cam 8 on its pivot 14 by engaging first one and then the other end of the slot. Any other stop or limiting device may be used. In the plane of the cam and pivoted in ears 15 or other suitable supports are latches or hooks 16, adapted to engage the notches 9 at the ends of the cam-face. These hooks are held against the face of the cam by means of coil-springs 17 between the pole-section 7 and the tails of the hooks. To the forked end of the trolley-wheel carrier 10 is secured an eye or hook 18, to which is secured one end of a cord or rope 19, that passes through an eye 20 in the bent end of the tails of the hooks 16, then through suitable guides 21, down the side of the trolley-pole, and over pulleys 22, one rope to the front of the car and the other to the rear to hang within easy reach of the motorman.

The pole consists of a main portion 23, having a cross-piece 24 arranged longitudinally of the car and pivoted in suitable supports 25. Stiff coil-springs 26, one on either side of the trolley-pole, hold the pole in vertical position and at the same time allow it to have a yielding lateral motion, and have at their upper ends a screw-eye 60, passing through a perforated lug 61 on the trolley-pole and a nut 62 on the screw-eye, whereby the tension of the springs may be adjusted. This portion 23 is provided in its upper end with the slot 27. Telescoping into the upper end of the portion 23 is a short section 28, held in its outward position by a spring 29 inside the portion 23, said section 28 limited in its motion by a pin 30, adapted to slide in the slot 27 of the portion 23.

In the upper end of the section 28 is a plug or latch 31, held in its outward position by means of a spring 32 within the spring-held telescoping section 28 and acting on the under side of the latch 31. This latch is provided with pins 33 diametrically opposite one another and projecting through slots 34 in the telescoping section 28. The latch is limited in its upward movement by means of chains, cords, or rods 35, one end of each of which is secured to a pin 33, the other hooked end of which, 36, has sliding motion through an eye 37 on the section 23.

On the pole-section 7 of the trolley-head are provided two eyes or sockets 39, into which may be inserted the bent end 40 of an erecting-lever 41. (Shown in Fig. 5.)

5 The operation of the device is as follows: The trolley-head is supposed to be latched to the trolley-pole and in operative position, as shown in Fig. 2. The trolley-head locked to the section 28 has a yielding vertical move-
10 ment in the pole-section 23 by reason of the spring 29 to accommodate the trolley-wheel to various heights of wire within certain limits. Should it be desired to reverse the direction of running of the car, the rope
15 19, which is connected at one end to the carrier of that trolley that is in engagement with the wire and passes through an eye in the tail of the hook 16 on the opposite side, is pulled. The pull on the cord will unlatch this hook
20 and by reason of the weight of the wire on the trolley-wheel, together with the action of the spring 29 on the telescoping section 28, will cause this trolley-wheel to fall, and thereby revolve both trolley-wheels on their pivots
25 14, cause the opposite hook to engage the notch 9, and the other trolley-wheel to come into contact with the wire. If from any cause the trolley-wheel should become disengaged from the wire, the spring 29 will cause the telescoping
30 section 28 to ascend to its limit. In doing so the wires 35 will also be carried to their limit and the hooks 36 engage with the eyes 37 to hold the latch 31. The telescopic section 28, however, continues to ascend, carrying
35 with it the trolley-head, hinged to its upper end. The latch is therefore pulled out of the tubular portion 7 of the head, and the entire head will then drop on its hinge and be clear of the wire.

40 The trolley-pole is adapted to receive a lateral movement by reason of the inclined springs 26, due to the wire not being concentric with the track.

Fig. 4 shows the modification for allowing
45 the lateral play of the trolley-pole. Each arm of the T portion 24 has one end of a coil-spring 50 secured thereto, said springs surrounding the arms, and have their other ends secured to a suitable base-plate or the
50 car.

Fig. 6 shows a modification in which the hooks 36 and eyes 37 are dispensed with. In this form the latch 31 is made longer and has a pin 64 passing through a slot 65 in the telescopic section 28 and also through a slot 66
55 in the section 23. The pin 64 will strike the upper end of slot 66 to hold the latch 31, while the telescopic section is free to rise by reason of the slot 65 to its limit, thereby causing the
60 latch to be withdrawn from the trolley-head. There may be a duplication of this structure on the opposite side of the trolley-pole and the stop-pin 30 and slot 27 dispensed with.

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

1. The combination with a trolley-pole, of a trolley-head comprising a pole-section hinged to the pole, a current-collector pivotally connected to the section, and a latch on the section
70 to hold the collector in different positions, substantially as described.

2. The combination with a tubular trolley-pole, of a trolley-head comprising a pole-section telescoped therein, a plurality of current-collectors pivotally connected to the section,
75 and means on the section to hold the collectors in different positions, substantially as described.

3. The combination with a trolley-pole, of a
80 trolley-head comprising a pole-section hinged to the pole, a plurality of current-collectors pivotally connected to the section and means to hold one or the other current-collectors in operative position, and a latch to hold the
85 pole-section in alinement with the pole, substantially as described.

4. The combination with a trolley-pole, of a trolley-head comprising a pole-section pivoted to the trolley-pole, a cam pivoted on the
90 end of said section, two trolley-wheels supported by the cam and latches on each side of the cam to engage it to hold a trolley-wheel in operative position, and a latch inside the trolley-pole to engage the pole-section to hold
95 it in alinement with the pole, substantially as described.

5. The combination with a trolley-pole, of a trolley-head comprising a pole-section hinged to the trolley-pole, a trolley-wheel carrier
100 journaled thereon and having two arms, a trolley-wheel journaled in each arm, and a latch on each side of the trolley-wheel carrier to hold a trolley-wheel in operative position; means connected to each arm and the
105 latch opposite thereto, whereby the trolley-wheel carrier can be rotated on its pivot and a latch to hold the pole-section normally in alinement with the pole, substantially as described.

6. The combination with a telescopic trolley-pole, of a trolley-head hinged to the end of the end section of said pole and having a current-collector thereon, a spring-held latch
110 on the end section of the pole to hold the trolley-head in operative position, and means to limit the outward movement of the latch, whereby when said current-collector is disengaged from the wire said latch will automatically unlock the trolley-head to permit
115 it to fall clear of the wire, substantially as described.

7. The combination with a tubular trolley-pole, of a section resiliently mounted therein, a trolley-head mounted in said section, a
120 cam pivoted in said head, forked arms radiating from the cam, trolley-wheels journaled in the arms, and latches pivoted on the head adapted to engage the cam, for the purpose specified.

8. The combination with a tubular trolley-pole, of a tubular section resiliently mount-
130

ed therein, a trolley-head mounted in said
section, a notched cam pivoted in said head,
forked arms radiating from the cam above the
notches, trolley-wheels journaled in the arms,
5 spring-latches pivoted on the head adapted
to engage the notches, and means for rotating
the cam on its pivot, for the purpose specified.

In testimony that I claim the foregoing as
my invention I have signed my name in pres-
ence of two subscribing witnesses.

EDWIN W. CLARK.

Witnesses:

PHILIP F. LARNER,
HENRY ORTH, Jr.