

No. 849,503.

PATENTED APR. 9, 1907.

Q. SAUDELLI.
TROLLEY POLE.

APPLICATION FILED JAN. 23, 1906.

Fig. 1.

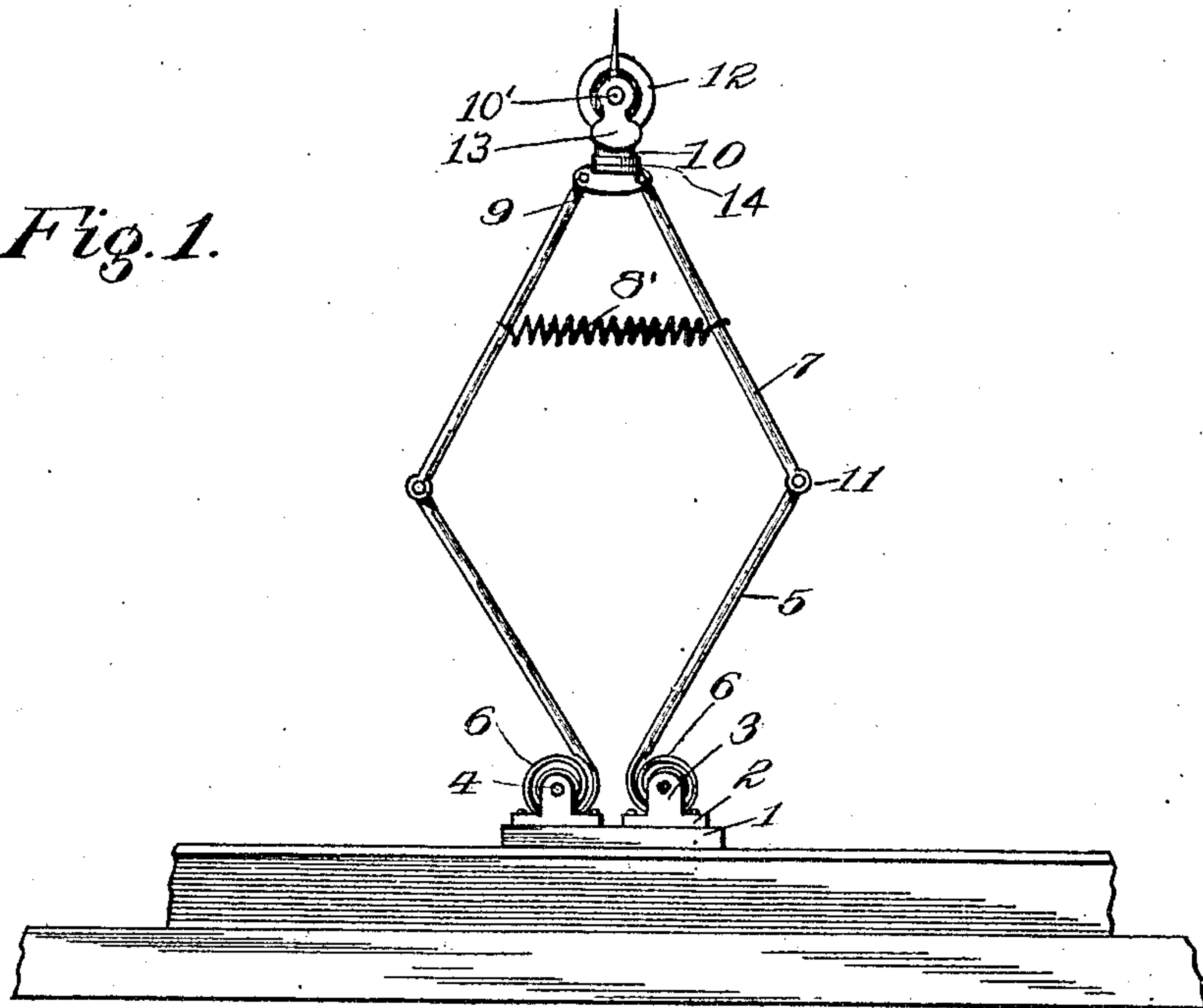


Fig. 2.

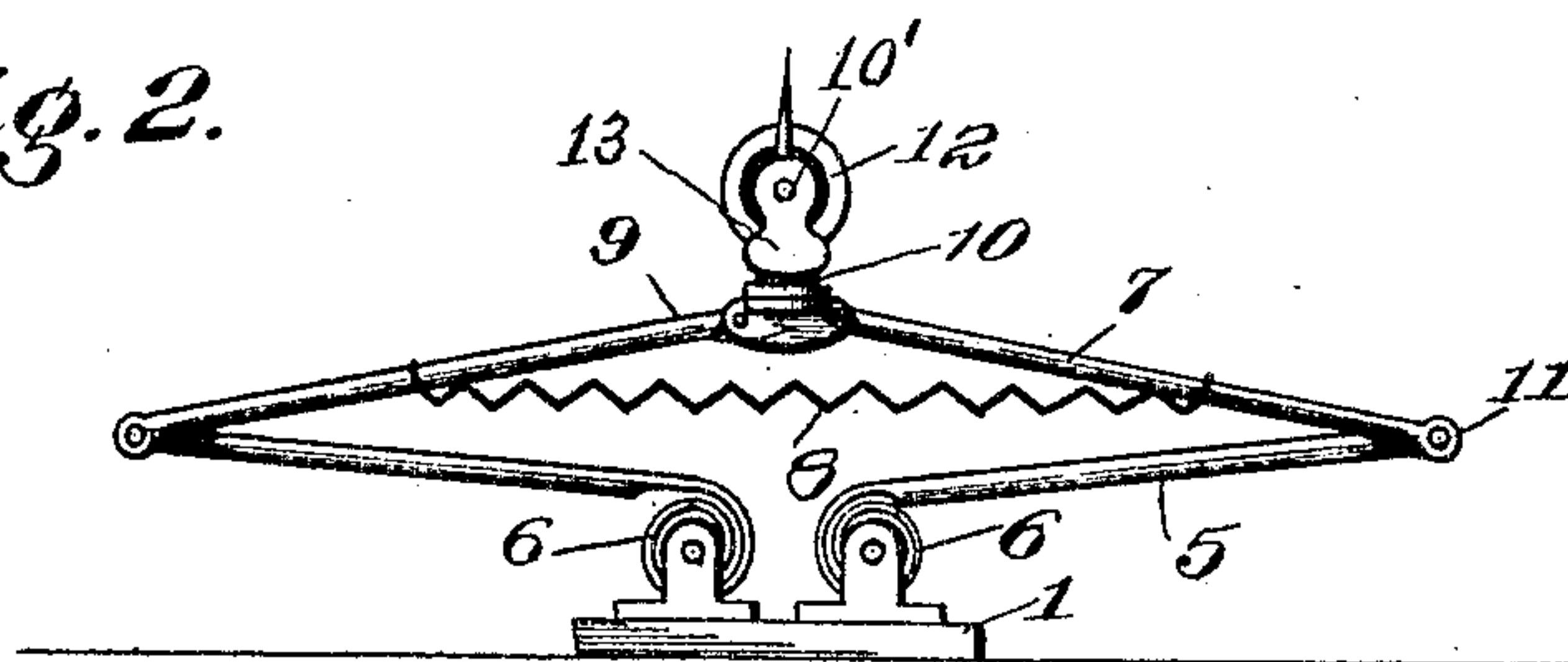


Fig. 3.

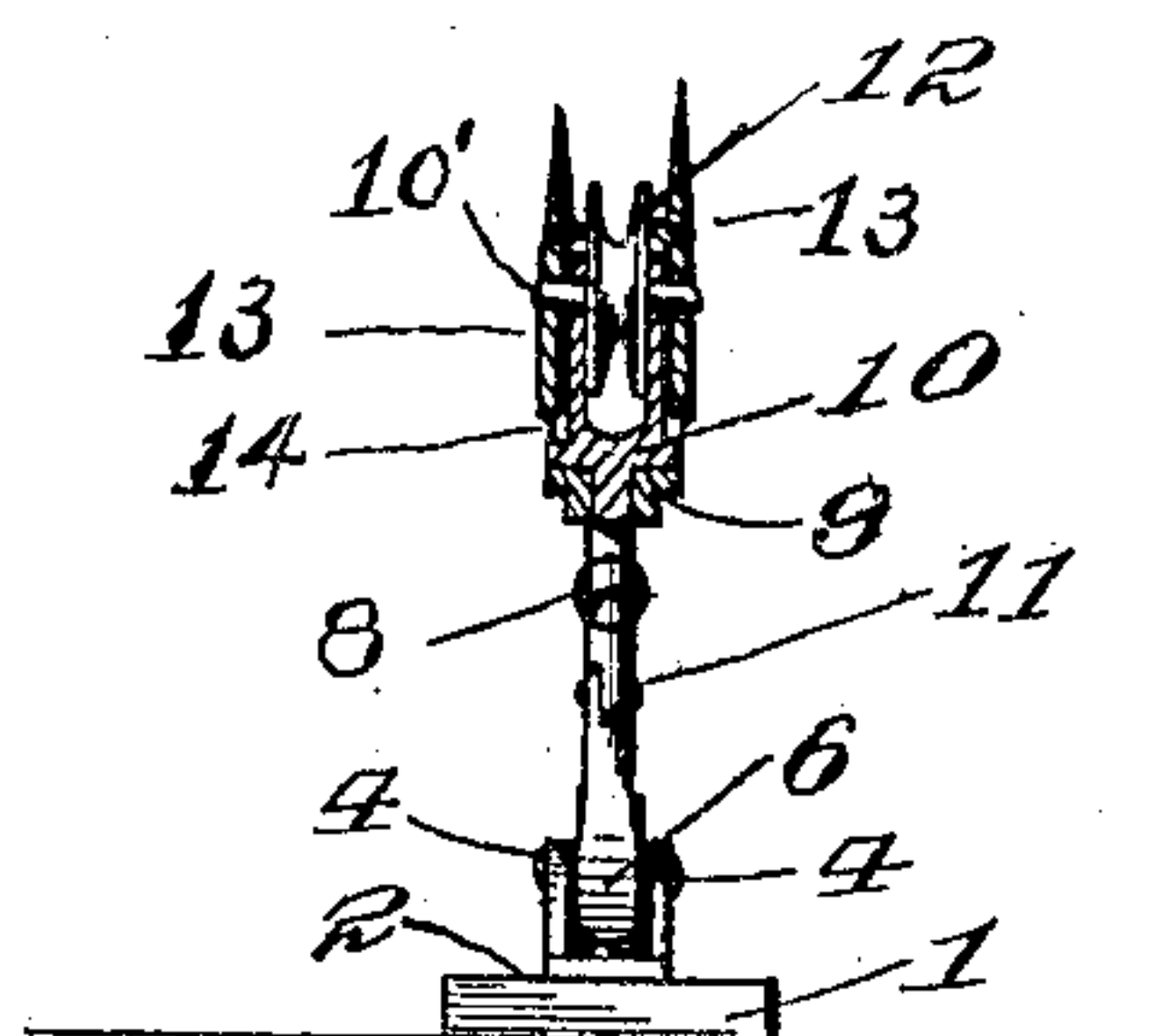
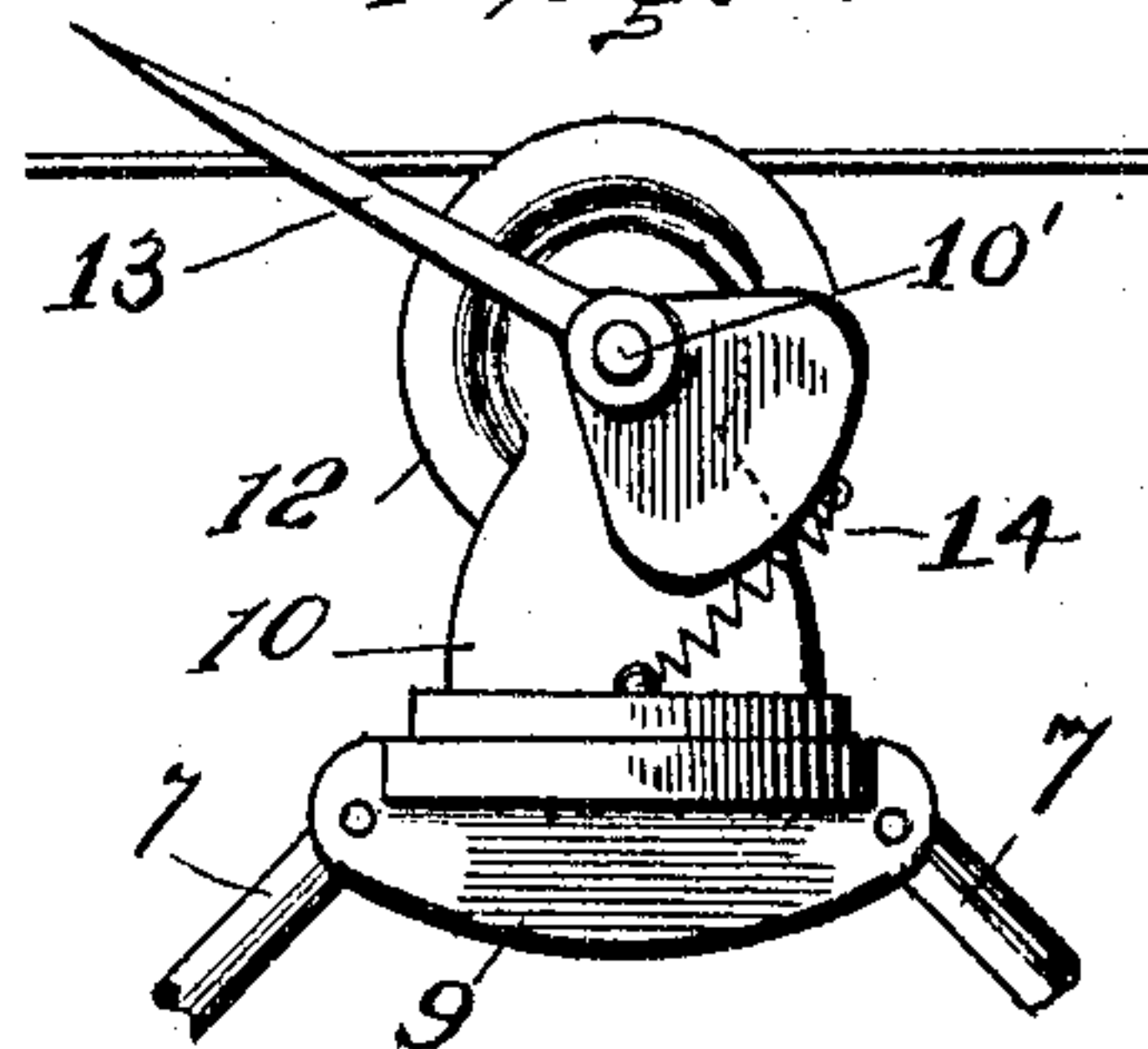


Fig. 4.



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Witnesses

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QUINTO SAUDELLI, OF FALL RIVER, MASSACHUSETTS.

TROLLEY-POLE.

No. 849,503.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed January 23, 1906. Serial No. 297,450.

To all whom it may concern:

Be it known that I, QUINTO SAUDELLI, a citizen of the United States, residing at Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Trolley-Poles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in trolley-poles adapted for use with the overhead system of electric railways, one of the objects being to provide a pole arranged to bear vertically against the wire, which pole shall be simple and comparatively inexpensive in construction, durable, easy of operation, and provided with means for yieldingly holding the same against the wire, and also means for yieldingly holding the pole in vertical position, the primary object of the invention being to provide means for retaining in vertical position a trolley-pole of the type described, although it is obvious that my invention may be used to advantage in connection with any other form of pole.

I am aware that expanding trolley-poles formed with toggle-arms of the character hereinafter described are not new; but my invention resides particularly in the construction hereinafter shown and described, whereby the trolley-pole retains a vertical position against the resistance of gravity or other forces.

Having in view the foregoing objects and advantages, my invention resides in the particular construction and arrangement of parts hereinafter more fully described, claimed, and illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation showing a section of the top of a car and showing my improved trolley-pole in operative position thereon. Fig. 2 is a side elevation similar to Fig. 1, but showing the toggle-arms expanded at their joints in the position they assume when the wire is brought close to the car, such as in passing under bridges and the like. Fig. 3 is a detail vertical transverse sectional view, and Fig. 4 is an enlarged side elevation of the upper end of the trolley-pole.

1 designates a suitable base or standard which is mounted on the top of the car carrying the pole. This base has removably mounted thereon a pair of standards 2, which

are provided with the upwardly-projecting lugs 3, having holes in their upper ends in which is fixedly mounted a pin 4. To these pins the lower ends of the toggle-arms 5 are secured. These toggle-arms are preferably constructed of bars of steel or other resilient metal and have their lower ends flattened and coiled in opposite directions to provide involute or spiral spring 6, the end of which is secured to said pin. The toggle-arms 5 have pivotally mounted thereon the upper toggle-arms 7, said arms being held in operative position by the springs 6 and by an auxiliary coil-spring 8, which preferably connects the two upper toggle-arms. These upper arms are pivotally connected with a frame 9, in which is rotatably mounted a trolley-wheel-supporting frame 10, having mounted thereon or formed integral therewith the upwardly-extending arms 7, carrying an axle or shaft 10', on which is suitably journaled a trolley-wheel 12. Pivotaly mounted on the axle or shaft 10' are the trolley-wire guards 13, the lower end of each being weighted and yieldingly connected with the frame 9 by means of a helical or coil spring 14, the purpose of these guards being to hold the wire and the wheel against lateral displacement.

In operation it will be observed that my particular construction of trolley-pole possesses superior advantages over those now in use, in that the spiral springs 6, comprising the lower ends of the toggle-arms, serve to retain the pole yieldingly in vertical position against the wire. These springs are aided by the auxiliary coil-spring 8, so that when the wire passes under a bridge or is brought close to the car from any reason the toggle-arms will yield at their joints 11, so that the pole will assume the position shown in Fig. 2, and when the wire again assumes a higher position above the car the pole will gradually follow it and the tension of the auxiliary spring 8, as well as that of the springs 6, will be relaxed.

It is apparent that as the toggle-arms are depressed the springs 6 are tightened, and relaxed when said arms assume a more vertical position. It is also manifest that when the pole is pulled over to a horizontal position in either direction the tension of both springs will be exerted against the same, one spring being coiled tighter against its tension and the other spring being uncoiled against its tension, the tendency of the springs being to

always hold the pole in a vertical position. If the springs 6 be made of sufficient tension, they will hold the pole in yielding vertical position against the wire without the use of any auxiliary spring, and the spring 8 may be
5 dispensed with by making the springs sufficiently strong to perform the function of holding the pole against the wire. The wire-guards being pivotally mounted on the axle
10 yield when contacting with such obstructions as cross-wires, wire-supports, and the like, and are instantly brought back to a vertical position by the springs when the obstruction has been passed.

15 While I have described and illustrated a certain form of trolley-pole, it is obvious that my invention may be applied and used to advantage in connection with other well-known forms and construction of trolley-poles.
20 Other minor changes in form, proportion, construction, and arrangement of parts will be obvious to the persons skilled in the art, but such changes come well within the scope and spirit of my invention, and I do not desire to be restricted to the precise construction and arrangement shown.

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

30 1. A trolley-pole comprising a base, a pair of oppositely-coiled spiral springs having their inner ends fixed upon said base, a pair of lower toggle-arms carried by the outer ends of said springs, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the
35 upper ends of the toggle-arms, a trolley-wheel revolubly mounted in said frame, and a coil-spring having its opposite ends connect-

ed to the upper toggle-arms, substantially as 40 shown and for the purposes set forth.

2. A trolley-pole comprising a base, bifurcated uprights upon said base, transverse pins fixed in said uprights, oppositely-coiled spiral springs arranged in said bifurcated uprights and having their inner ends fixed to
45 said pins, a pair of lower toggle-arms carried by the outer ends of said springs, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the upper ends of the upper toggle-arms,
50 and a trolley-wheel revolubly mounted in said frame.

3. A trolley-pole comprising a base, bifurcated uprights thereon, transverse pins fixed 55 in said uprights, a pair of lower toggle-arms formed of resilient metal and having their lower ends flattened and bent to provide oppositely-coiled spiral springs, said springs being arranged in said uprights and having
60 their inner ends fixed to said pins, a pair of upper toggle-arms pivotally connected to the lower toggle-arms, a frame pivotally connecting the upper ends of the upper toggle-arms, a second frame pivoted in the first-men- 65 tioned frame, a trolley-wheel revolubly mounted in said second frame, guards arranged upon said second frame upon opposite sides of said trolley-wheel, and a coil-spring having its opposite ends connected 70 to the upper toggle-arms, substantially as shown and described.

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

QUINTO SAUDELLI.

Witnesses:

JOHN E. HEALY,
ARTHUR J. HOWLAND.