

J. EMIGH.
AUTOMATIC TAKE-UP FOR FLEXIBLE CONDUCTORS.
APPLICATION FILED MAR. 6, 1908.

906,696.

Patented Dec. 15, 1908.

3 SHEETS—SHEET 1.

FIG. 1

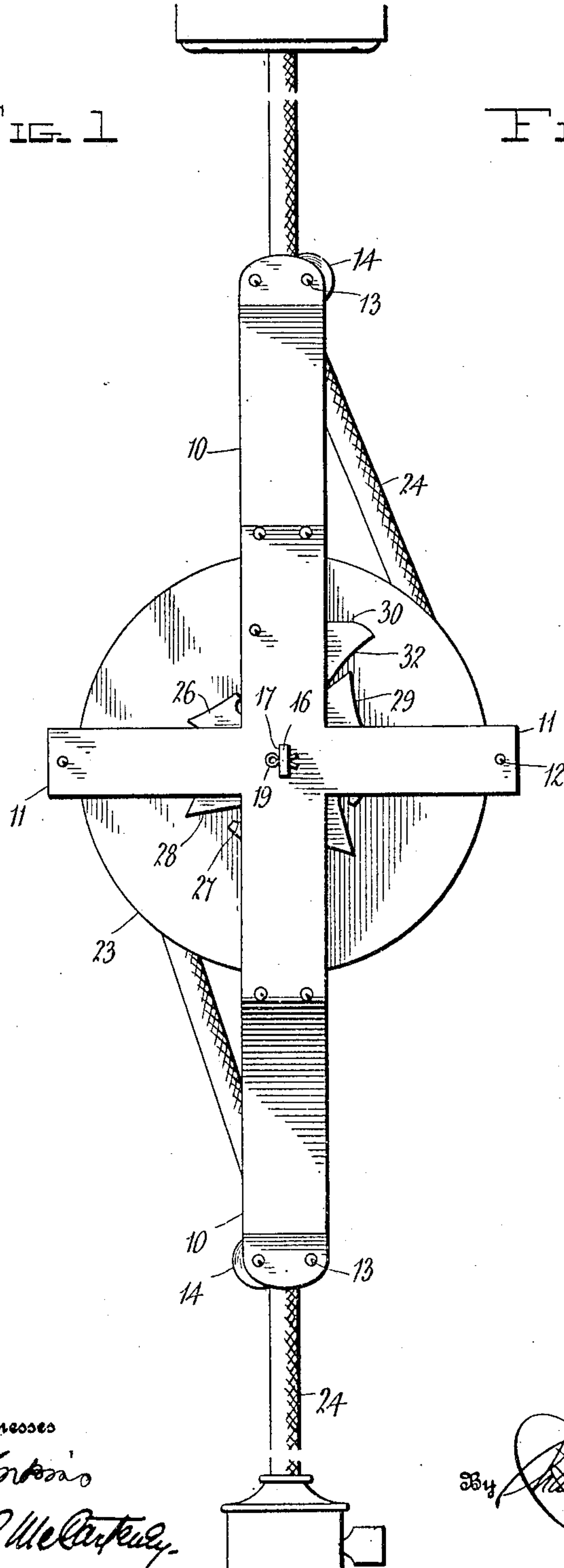
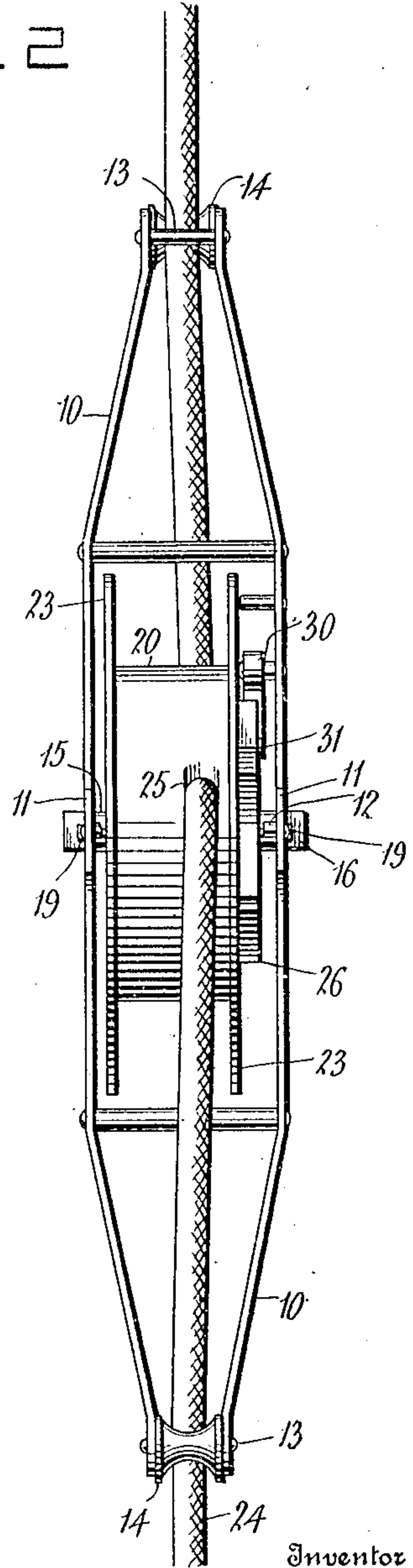


FIG. 2



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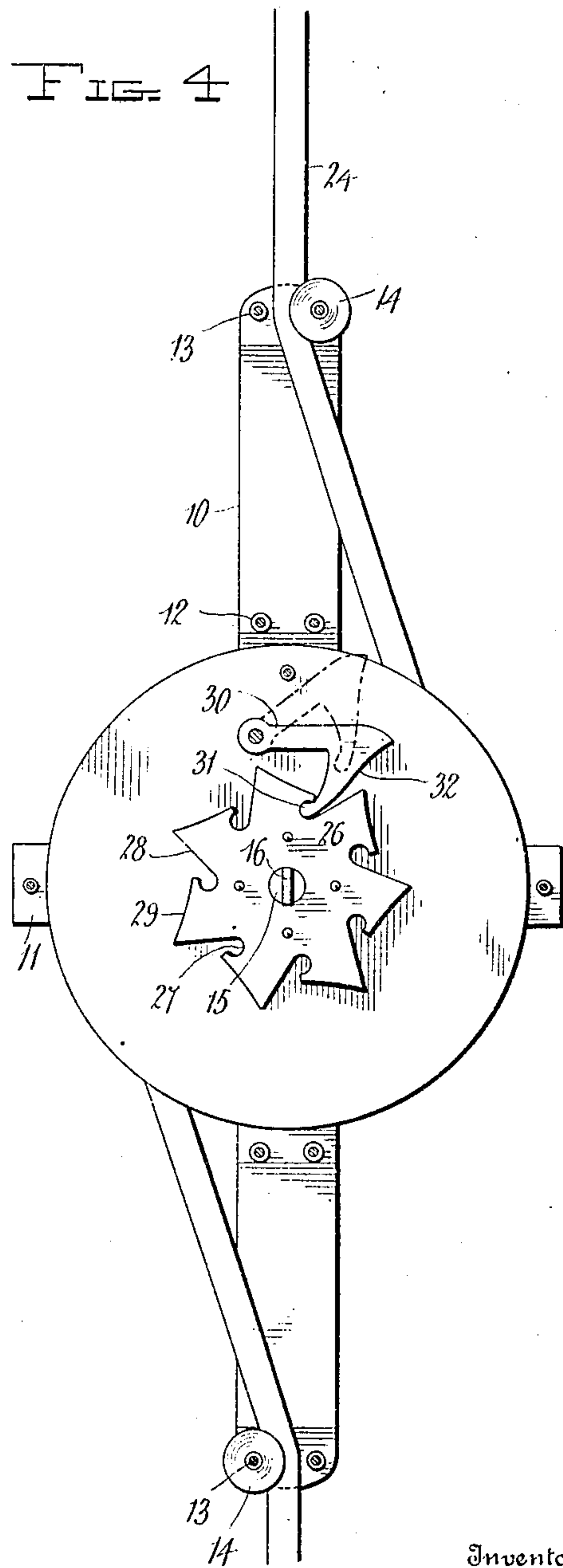
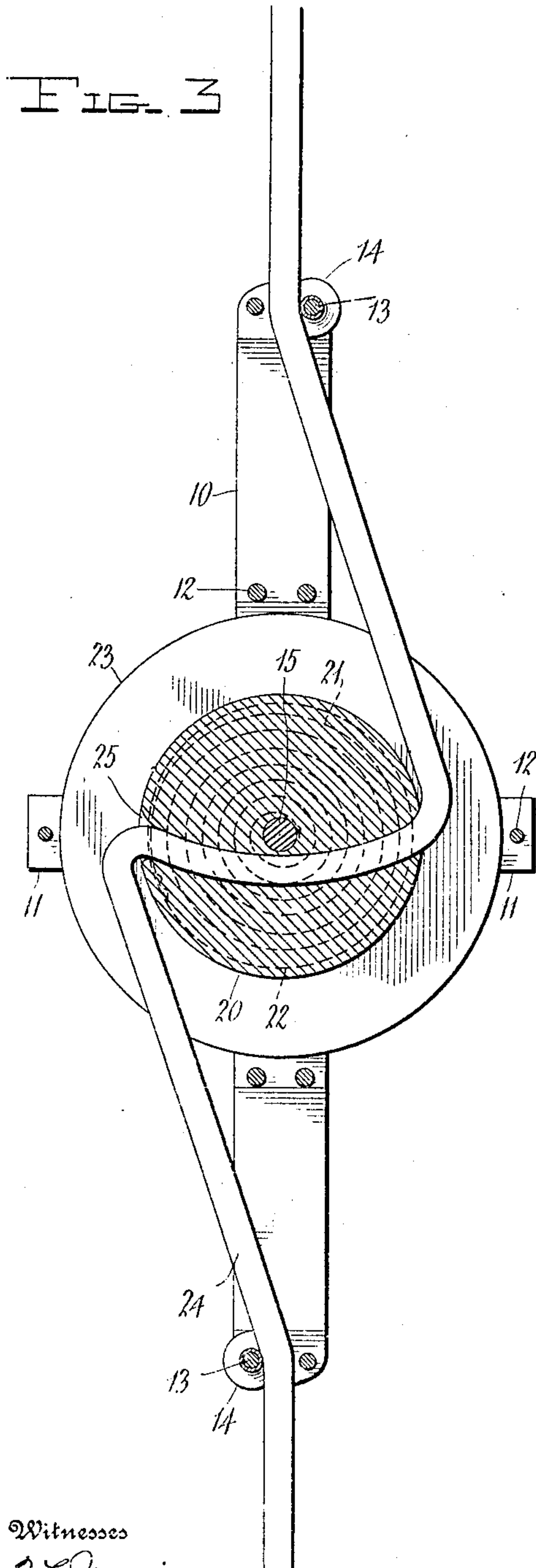
Witnesses
H. C. McCarty

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3 SHEETS—SHEET 3.

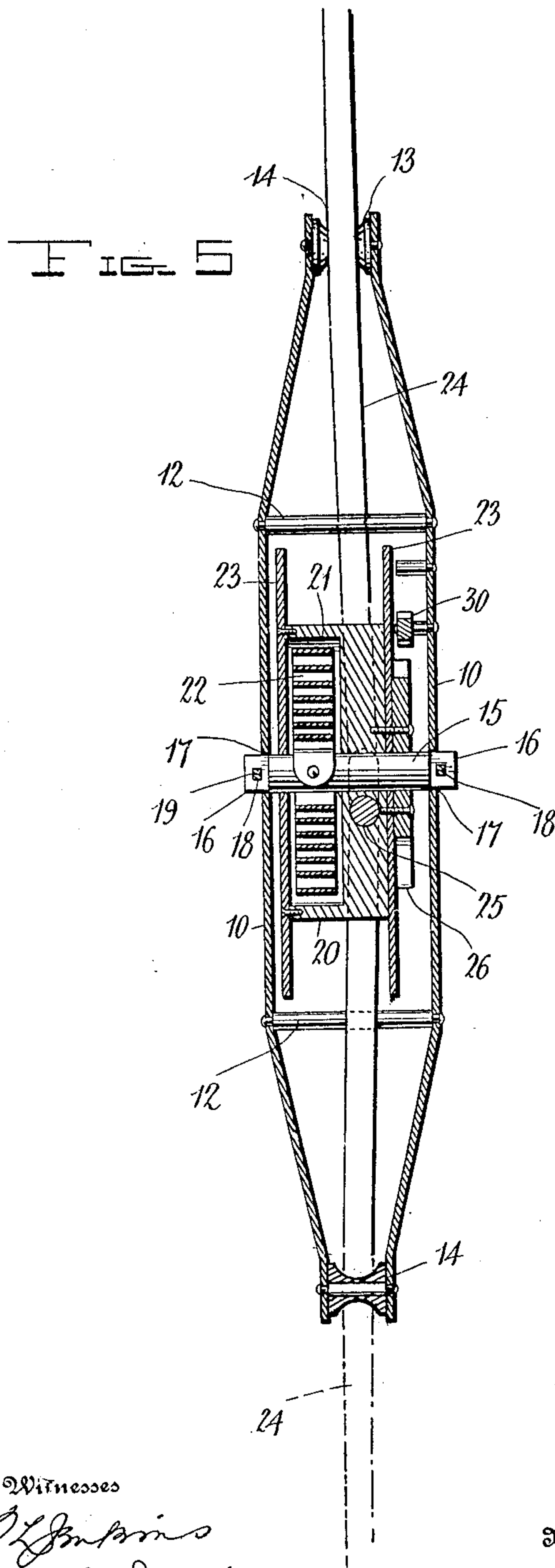


FIG. 7

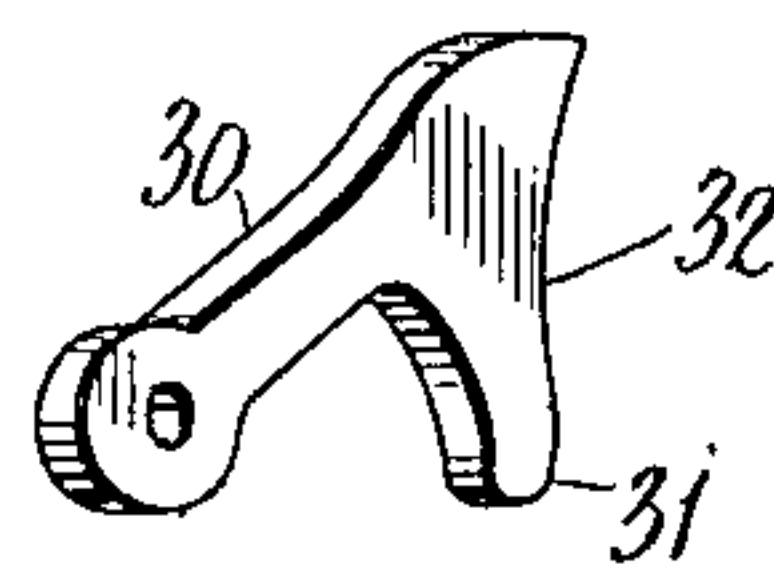
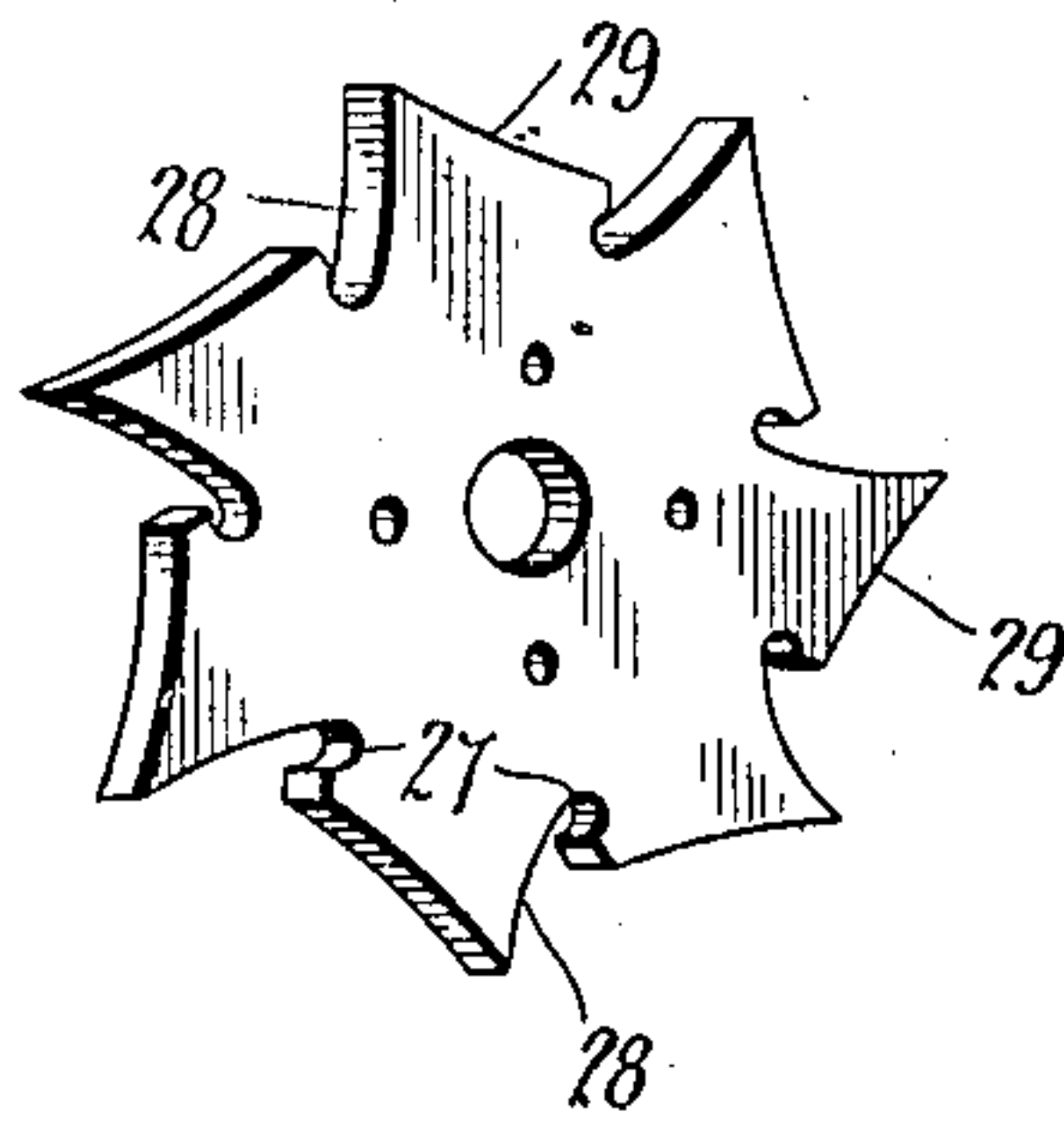


FIG. 6



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UNITED STATES PATENT OFFICE.

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AUTOMATIC TAKE-UP FOR FLEXIBLE CONDUCTORS.

No. 906,696.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed March 6, 1908. Serial No. 419,561.

To all whom it may concern:

Be it known that I, JARVIS EMIGH, a citizen of the United States, residing at Walla Walla, in the county of Wallawalla, State of Washington, have invented certain new and useful Improvements in Automatic Take-Ups for Flexible Conductors; 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.

This invention relates to automatic take-ups for the flexible conductors of suspended electric lamps and has for its object to provide a take-up of such character that it may be placed at the middle of the flexible conductor and operated by grasping the conductor directly above the lamp to which it supplies current, and then pulling or letting up upon the conductor according as to whether it is desired to lower or to raise the lamp.

While the construction of my automatic take-up is, in general, much simpler and more efficient than the present ones, the principal novelty in the invention lies in the specific construction of the pawl and ratchet employed, the object being to render the raising and lowering of the light easier to accomplish. In most such devices now employed repeated pulls are necessary to permit unwinding of the conductor reel and the object I have in view is therefore to obviate this undesirable feature.

In the accompanying drawings, Figure 1 is a side elevation of the device in use, Fig. 2 is an edge view thereof, Fig. 3 is a vertical longitudinal sectional view taken in a plane with the opening through the drum through which the conductor passes, Fig. 4 is a similar view but taken in a plane directly inwardly of one of the side frame plates and showing the pawl and ratchet mechanism in elevation, the pawl being shown as engaged with the ratchet in full lines and released in dotted lines, Fig. 5 is a vertical transverse sectional view through the device, Fig. 6 is a detail perspective view of the ratchet, and, Fig. 7 is a similar view of the pawl.

As shown in the drawings, the frame of the device is made up of side frame plates 10 having each a pair of lateral extensions 11 which project from the longitudinal edges of the plates at a point mid-way between the ends thereof, and spacing rivets 12 which connect

the side frame plates. These plates are further connected, at their upper and lower ends, by short shafts 13 upon which are mounted rollers 14 and by a shaft 15 the ends of which are reduced and squared as at 16 and passed through slots 17 in the plates 10 at their middles, these ends being formed with openings 18 through which small pins 19 are passed the pins serving to hold the shaft in place and to prevent the plates 10 springing apart at their middles.

A winding drum 20 is rotatably mounted upon the shaft 15 and is comprised of a body having one of its side faces recessed as at 21 to receive a coil spring 22, one end of the spring being secured to the wall of the recess and the other or inner end to the shaft 15. Circular face plates 23 are secured to each side face of the body of the drum and these plates are of greater diameter than the said body of the drum so as to afford flanges at the ends of the body between which flanges the flexible conductor is to be wound upon the body of the drum. This conductor is indicated by the numeral 24 and is passed through an opening 25 formed through the solid portions of the body of the drum. It will be understood, of course, that if the drum is wound in one direction, it will be against the tension of the spring 22 and that such rotation of the drum will serve to wind the spring, rotation of the drum in an opposite direction being had through the unwinding of the spring, and in order to control this rotation of the drum I have provided a novel form of pawl and ratchet which will now be described. Riveted or otherwise fixed upon the outer face of one of the face plates 23, is a ratchet, 26 which is clearly illustrated in Fig. 6 of the drawings and which is formed between each of its teeth with a recess 27 directed oppositely to the direction of rotation of the ratchet due to the action of the spring. The teeth of the ratchet have their rear edges 28 formed as a continuation of the contiguous recess and extended substantially radially, their other edges 29 being presented outwardly or in other words extended each in a line substantially at right angles to a line drawn tangential to the shaft 15 and intersecting their said edges. A pawl 30 is pivoted to that side frame plate 10 which is next adjacent the ratchet 26 and this pawl is formed with a tooth 31 of such outline as to fit exactly within the recesses 27 of the ratchet and has its outer edge extended diagonally

as at 32 so as to ride over the edges 28 of the teeth of the ratchet, the inner portions of these edges being, as stated, formed as a curved continuation of the respective recesses 27.

In applying my device to a flexible conductor, the conductor is threaded through the opening in the drum of the device until this drum is midway of the conductor and the drum is then rotated to wind the conductor thereupon and the lower end of the conductor is then grasped and pulled to unwind the conductor, it being understood that this unwinding of the conductor serves to wind the spring within the drum, the pawl 30 dropping into engagement with the ratchet. When it is desired to shorten the conductor and consequently raise the light to which it supplies current, the lower end of the conductor is grasped and sufficient pull exerted to disengage the pawl from the ratchet. When this disengagement is had, the conductor is almost wholly released and is wound, by the action of the spring 22, upon the drum, this winding being of multiple character as will be readily understood. It will, of course, be understood that the side plates 10 may be ornamented in any manner whatsoever without detracting from their function, but I have not shown such ornamentation as it will only serve to obscure the construction of my device.

What is claimed, is:—

1. The combination, with a frame and a spring-controlled rotatable drum carried thereby, of a ratchet fixed upon the drum and having formed between each pair of teeth a recess extending in the direction opposite to the direction of rotation of the drum under the action of the spring and a pawl carried by the frame and provided with a tooth arranged to be engaged by the ratchet teeth and carried over said recesses when the drum is rotated at a predetermined rate of speed.

2. The combination, with a frame and a spring-controlled rotatable drum carried thereby, of a ratchet fixed upon the drum and having formed between each pair of teeth a recess extending inwardly in the direction opposite to the direction of rotation of the drum under the action of the spring, the front edge of each recess forming a continuation of the rear edge of the adjacent tooth, and a pawl carried by the frame and provided

with a tooth arranged to be engaged by the ratchet teeth and carried over said recesses when the drum is rotated at a predetermined rate of speed.

3. The combination, with a frame and a spring-controlled rotatable drum carried thereby, of a ratchet fixed upon the drum and having formed between each pair of teeth a recess extending in the direction opposite to the direction of rotation of the drum under the action of the spring, and a V-shaped pawl having one arm pivoted to the frame, and the other arm provided at its free end with a tooth arranged to be engaged by the ratchet teeth and carried over said recesses when the drum is rotated at a predetermined rate of speed.

4. The combination, with a frame and a spring-controlled rotatable drum carried thereby, of a ratchet fixed upon the drum and having formed between each pair of teeth a recess extending inwardly in the direction opposite to the direction of rotation of the drum under the action of the spring, the front edge of each recess forming a continuation of the rear edge of the adjacent tooth, and a V-shaped pawl having one arm pivoted to the frame, and the other arm provided at its free end with a tooth arranged to be engaged by the ratchet teeth and carried over said recesses when the drum is rotated at a predetermined rate of speed.

5. The combination, with a frame, of a spring-actuated rotatable drum carried thereby and provided with an opening formed through its body portion, a flexible conductor having its central portion passed through said opening and its ends wound therearound under the action of the spring, a ratchet fixed upon the drum and having formed between each pair of teeth a recess extending in the direction opposite to the direction of rotation of the drum under the action of the spring and a pawl carried by the frame and provided with a tooth arranged to be engaged by the ratchet teeth and carried over said recesses when the drum is rotated at a predetermined rate of speed.

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

JARVIS EMIGH.

Witnesses:

J. CHITWOOD,
E. S. EMIGH.