

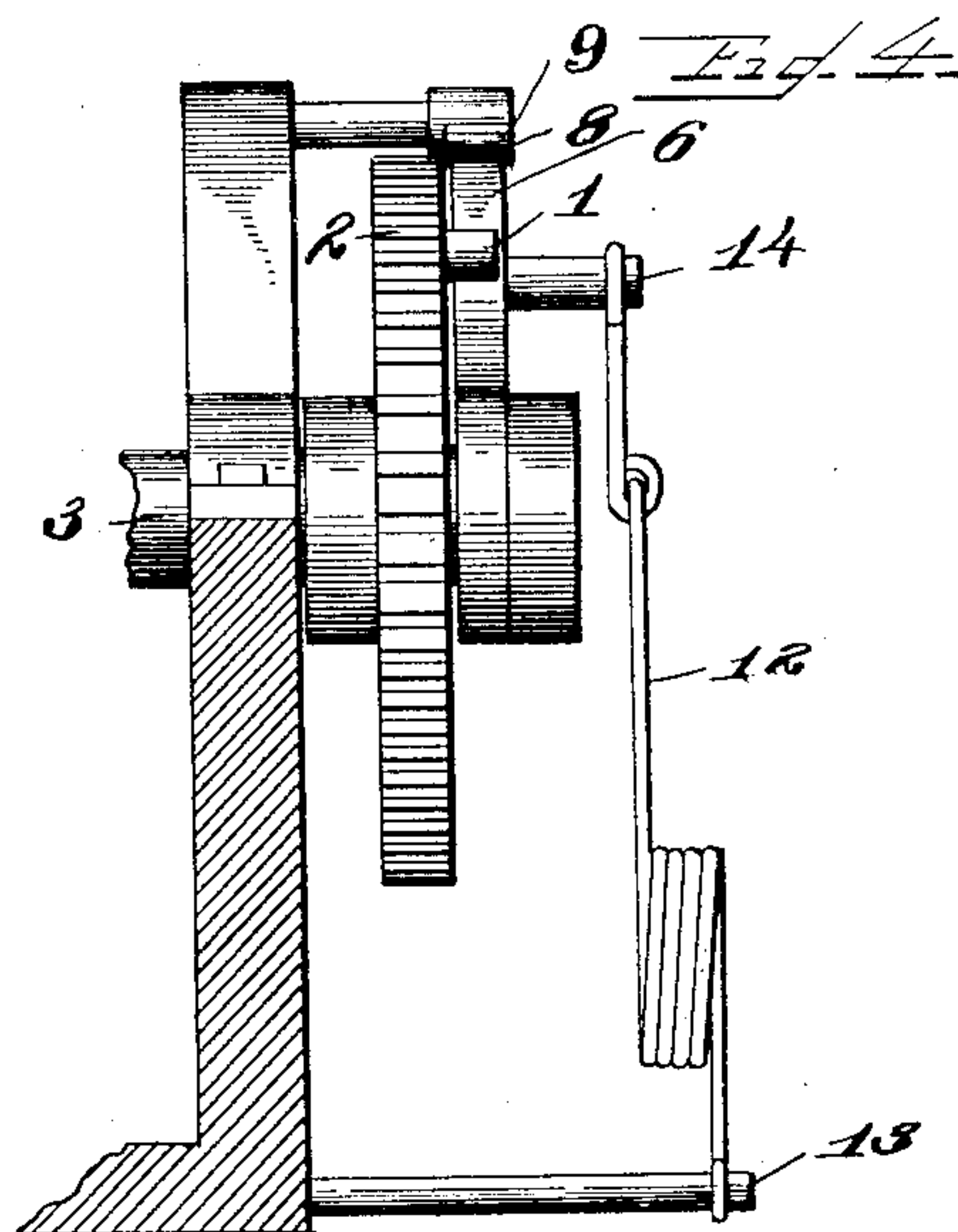
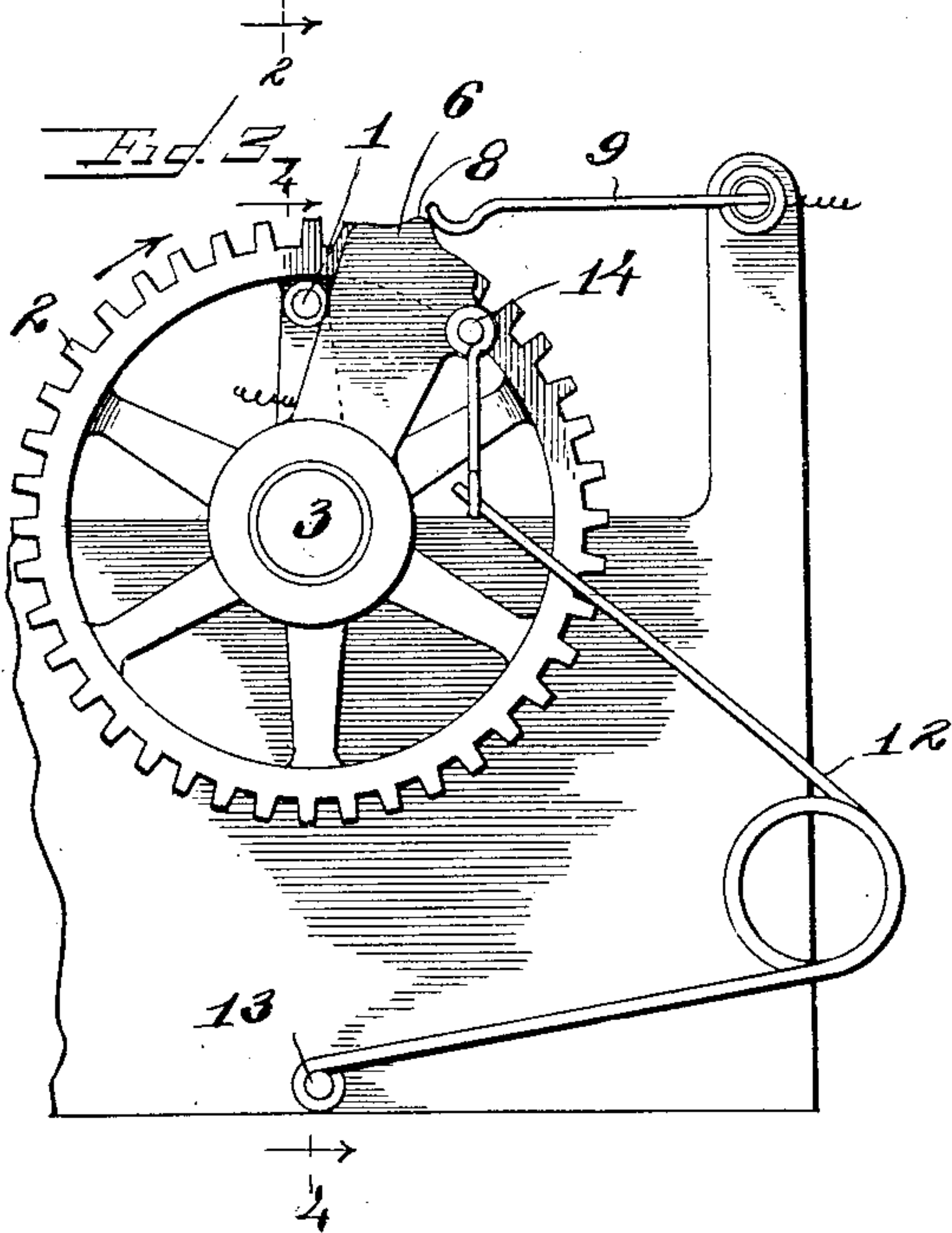
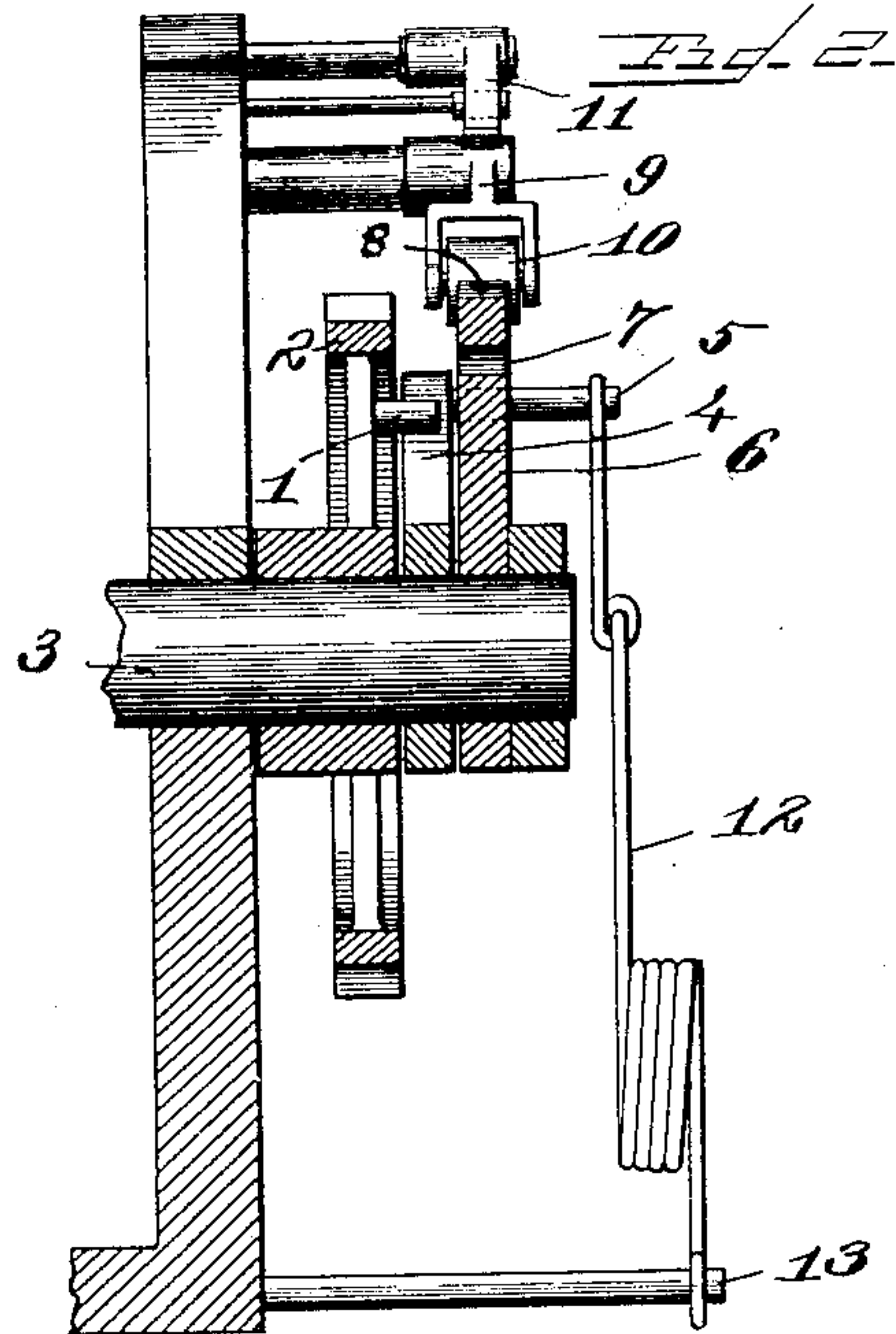
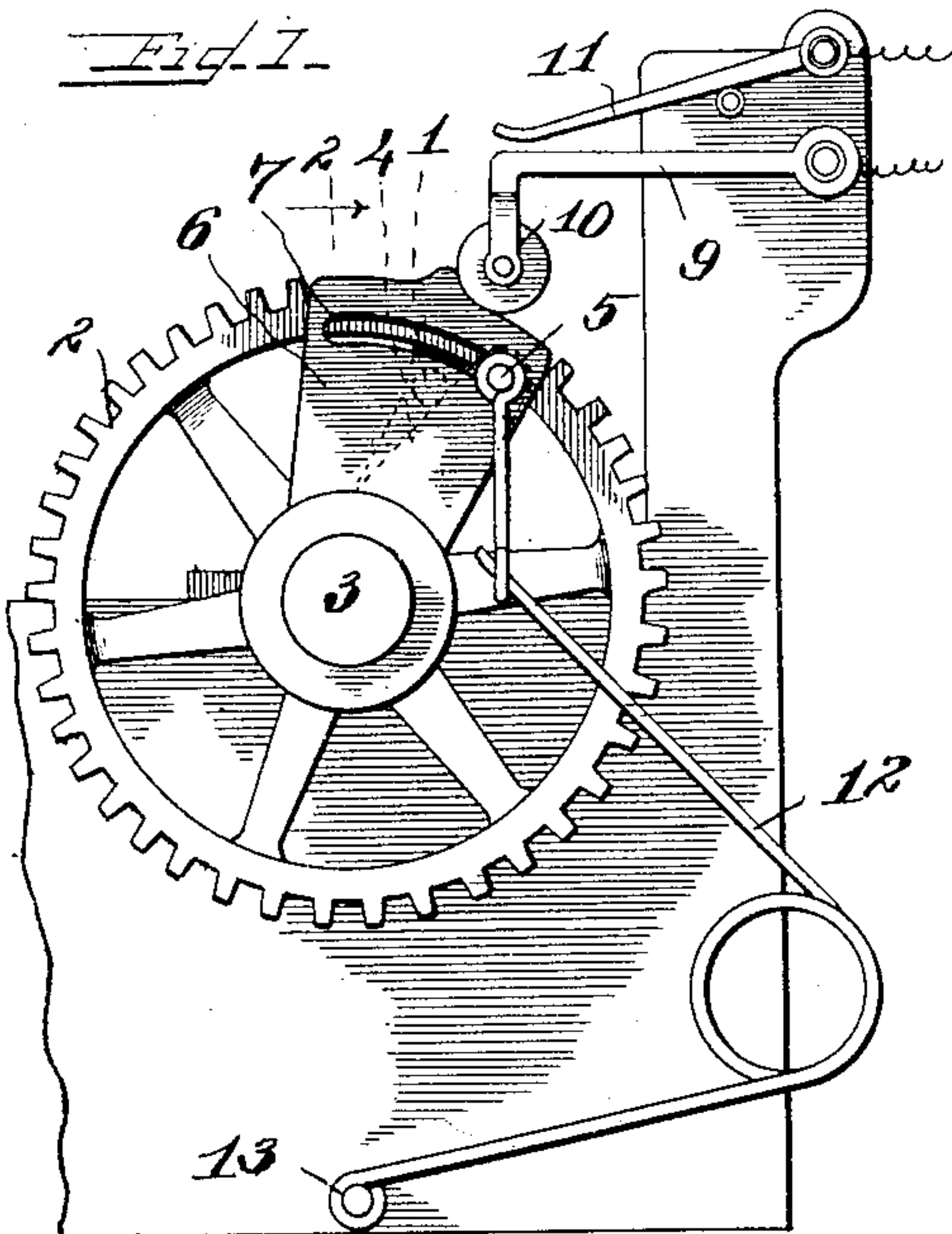
No. 745,370.

PATENTED DEC. 1, 1903.

T. H. McQUOWN.
ELECTRIC CIRCUIT CLOSER AND BREAKER.

APPLICATION FILED JAN. 2, 1903.

NO MODEL.



Witnesses—

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Att—

UNITED STATES PATENT OFFICE.

THOMAS H. McQUOWN, OF BIGGSVILLE, ILLINOIS.

ELECTRIC-CIRCUIT CLOSER AND BREAKER.

SPECIFICATION forming part of Letters Patent No. 745,370, dated December 1, 1903.

Original application filed September 26, 1902, Serial No. 124,910. Divided and this application filed January 2, 1903. Serial No. 137,445. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. McQUOWN, a citizen of the United States, and a resident of Biggsville, in the county of Henderson and State of Illinois, have invented certain new and useful Improvements in Electric-Circuit Closers and Breakers, of which the following is a specification.

My invention relates to electric-circuit closers and breakers; and its object is to provide an electric-circuit closer and breaker simple and economical in construction and adapted to instantaneously close and break the circuit, so that the circuit will be closed for only an instant.

My object is attained by and my invention consists in a mechanism comprising a machine-movable or hand-movable part by whose motion the electric contact-points are connected and then separated, together with means, preferably a spring, for independently moving and normally accelerating said movable part at a point in its travel when it has just caused or is about causing said contact-points to connect, by the operation of which means the contact of said points is made for only an instant and cannot be continuous, as might otherwise be in case the machinery driving the movable part remained on a "dead-center."

My invention consists also in the novel mechanisms and combinations of parts hereinafter described, and particularly pointed out in the claims, which mechanisms and combinations form a practical embodiment of my invention.

In the accompanying drawings, Figure 1 is a front view of my improved circuit closer and breaker. Fig. 2 is a vertical section of Fig. 1 on line 2 2 of Fig. 1 looking in the direction of the arrow shown at said line 2 2. Fig. 3 is a front view of a simpler form of my improved circuit closer and breaker, and Fig. 4 is a vertical section of Fig. 3 on line 4 4 of Fig. 3 looking in the direction of the arrow shown at said line 4 4.

A projecting part or pin 1, carried by a crank, or, as shown in the drawings, by a wheel 2, which is revolved on a stud or spindle 3 by a moving part of the machinery to which my circuit closer and breaker is applied, is adapt-

ed to abut against the crank-like arm 4 (shown in Figs. 1 and 2) loosely rotating on said stud or spindle, and thus rotate it. This crank-like arm 4 has a pin 5, adapted to move by the revolution of the crank-like arm between two abutments on a plate 6, sector-shaped, as shown in Figs. 1 and 2 loosely rotating on said stud or spindle, and to rotate it by engaging with one of said abutments. These abutments are in the construction shown in Figs. 1 and 2 the ends of the slot-opening 7 in the plate 6, through which opening the pin 5 extends. This plate 6 has on its periphery a slight elevation or rib 8, on which in the revolution of the plate 6 presses a suitable spring or lever-arm 9, which may be furnished, as shown in Figs. 1 and 2, with a friction-roller 10. The elevation 8 in the revolution of the plate 6 raises the lever-arm or spring until it makes electric contact with the contact-spring 11 in Figs. 1 and 2, whereby the circuit is closed. Instantly the circuit is closed it is broken by the action of the spring 12, attached to the pin 5 in Figs. 1 and 2 and pressing it toward the fixed point 13 of said spring, as more fully explained hereinafter. The crank or wheel 2 in Figs. 1 and 2 may revolve in either direction and the operation will be the same.

A simpler form of my invention, adapted to the revolution of the crank or wheel 2 in but one direction, is shown in Figs. 3 and 4, the crank-like arm 4 being omitted, the plate 15 rotatable on the spindle 3 and having no slot, and the spring 12 being attached to the pin 14 on the plate 15, as will be readily understood by referring to Figs. 3 and 4.

It is obvious that in any embodiment of my invention the contact-points and electrical connections may be arranged in various ways. For instance, the connections may be with the lever or spring 9 and the contact-spring 11, they forming contact-points as shown in Figs. 1 and 2, or the connections may be with the plate 15 and the contact-spring 9, they forming contact-points as shown in Figs. 3 and 4, suitable insulation being provided in any case.

It will be understood that whether the rotation of the plate 6 or the plate 15 is fast or slow the electric connection is always broken

instantly it is closed, because as soon as the plate 6 or the plate 15 is rotated far enough for the pin 5 in Figs. 1 and 2 or the pin 14 in Figs. 3 and 4 to pass its dead-center—that is, to pass a line produced upward from the fixed point 13 of the spring 12 through the center of the spindle 3—the spring 12 instantly acts on the plate 6 or the plate 15, accelerating its motion and rotating it forward, so that the projection 8 is by the action of the spring forced into contact with the lever-arm or spring 9 and instantly out of contact therewith, whereby the circuit is by the force of the spring 12 broken instantly it is closed.

The drawings illustrate my circuit closer and breaker as adapted to be operated by machinery, as by the propelling mechanism of a vessel, locomotive, &c., in connection with which my invention may be used and to which use it is especially adapted; but it is evident that my circuit closer and breaker may be operated by hand or otherwise, as desired.

The wheel 2 being rotated, the operation of my circuit closer and breaker is manifest.

This is a divisional application divided from my application, Serial No. 124,910, filed in the United States Patent Office September 26, 1902.

It is obvious that my invention may be embodied in modified and varying mechanisms, and I do not limit myself to the hereinbefore-described mechanism as the only embodiment thereof.

I claim—

1. In an electric-circuit closer and breaker, electric contact-points, a driving part continuously rotatable on an axis, a second part to connect and separate by its motion the contact-points and continuously rotatable loosely on the same axis, a striker on the first part adapted to engage the second part and rotate it with the rotation of the first part, and independent means for accelerating the rotation of the second part at a point in its circuit where it causes the contact-points to connect and separate.

2. In an electric-circuit closer and breaker, electric contact-points, a driving part continuously rotatable on an axis, a second part to connect and separate by its motion the contact-points and continuously rotatable loosely on the same axis, a striker on the first part

adapted to engage the second part and rotate it with the rotation of the first part, and a spring for accelerating the rotation of the second part at a point in its circuit where it causes the contact-points to connect and separate.

3. In an electric-circuit closer and breaker, electric contact-points, a driving part rotatable on an axis in either direction, a second part loosely rotatable in either direction on the same axis, a striker on the first part adapted to engage the second part and rotate it with the rotation of the first part, a third part to connect and separate the contact-points and loosely rotatable in either direction on the same axis, two abutments on the third part between which is adapted to move a striker on the second part, said striker on the second part adapted to move between said abutments and by engaging with either to rotate the third part with the rotation of the second part, and independent means for accelerating the rotation of the third part at a point in its circuit where it causes the contact-points to connect and separate.

4. In an electric-circuit closer and breaker, electric contact-points, a driving part rotatable on an axis in either direction, a second part loosely rotatable in either direction on the same axis, a striker on the first part adapted to engage the second part and rotate it with the rotation of the first part, a third part to connect and separate the contact-points and loosely rotatable in either direction on the same axis, two abutments on the third part between which is adapted to move a striker on the second part, said striker on the second part adapted to move between said abutments and by engaging with either to rotate the third part with the rotation of the second part, and a spring for accelerating the rotation of the third part at a point in its circuit where it causes the contact-points to connect and separate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS H. McQUOWN.

Witnesses:

ED KELLY,

W. D. HENDERSON.