

(No Model.)

D. S. SCHUREMAN.
ELECTRIC CIRCUIT BREAKER.

No. 516,025.

Patented Mar. 6, 1894.

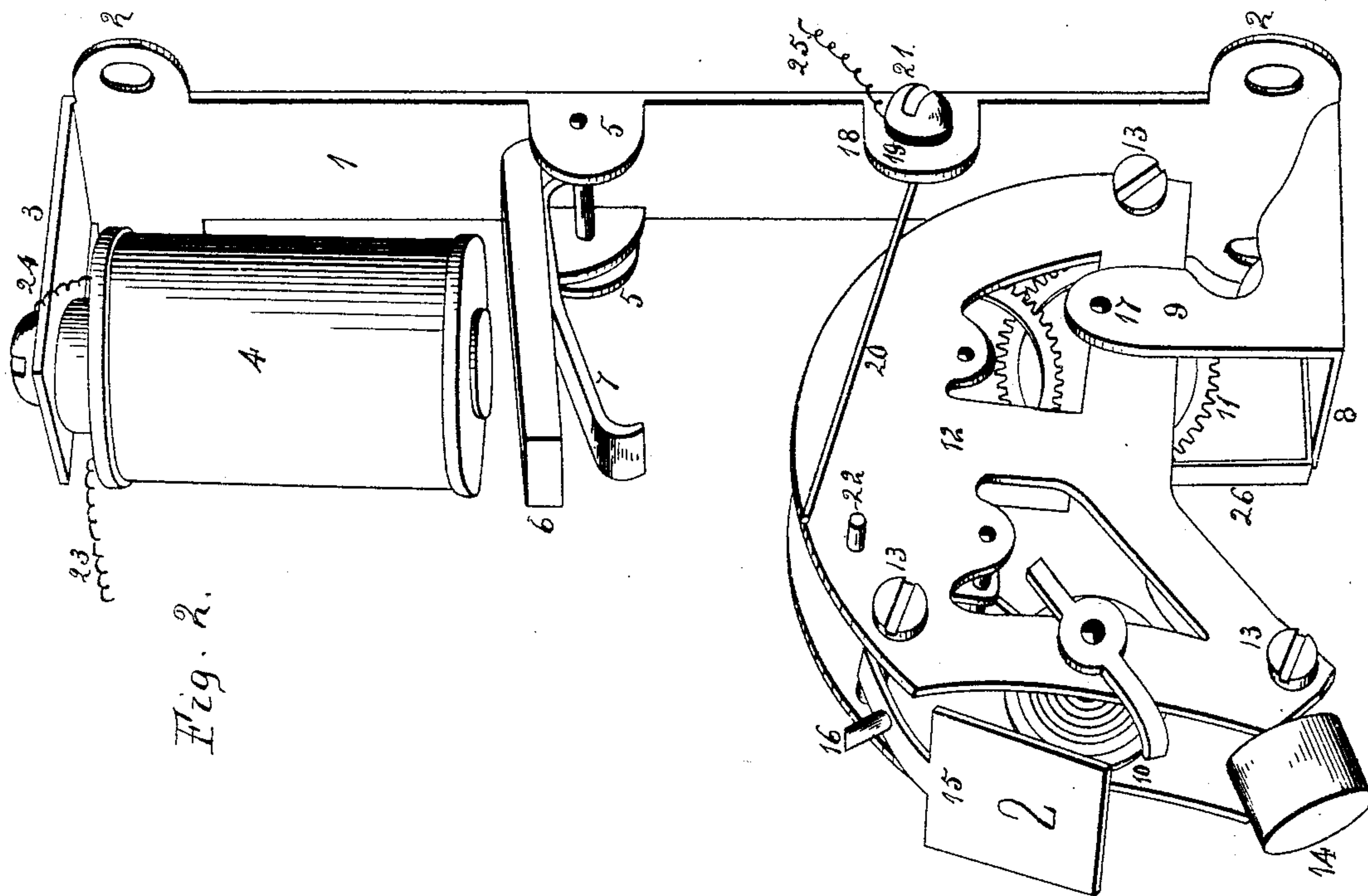


Fig. 2.

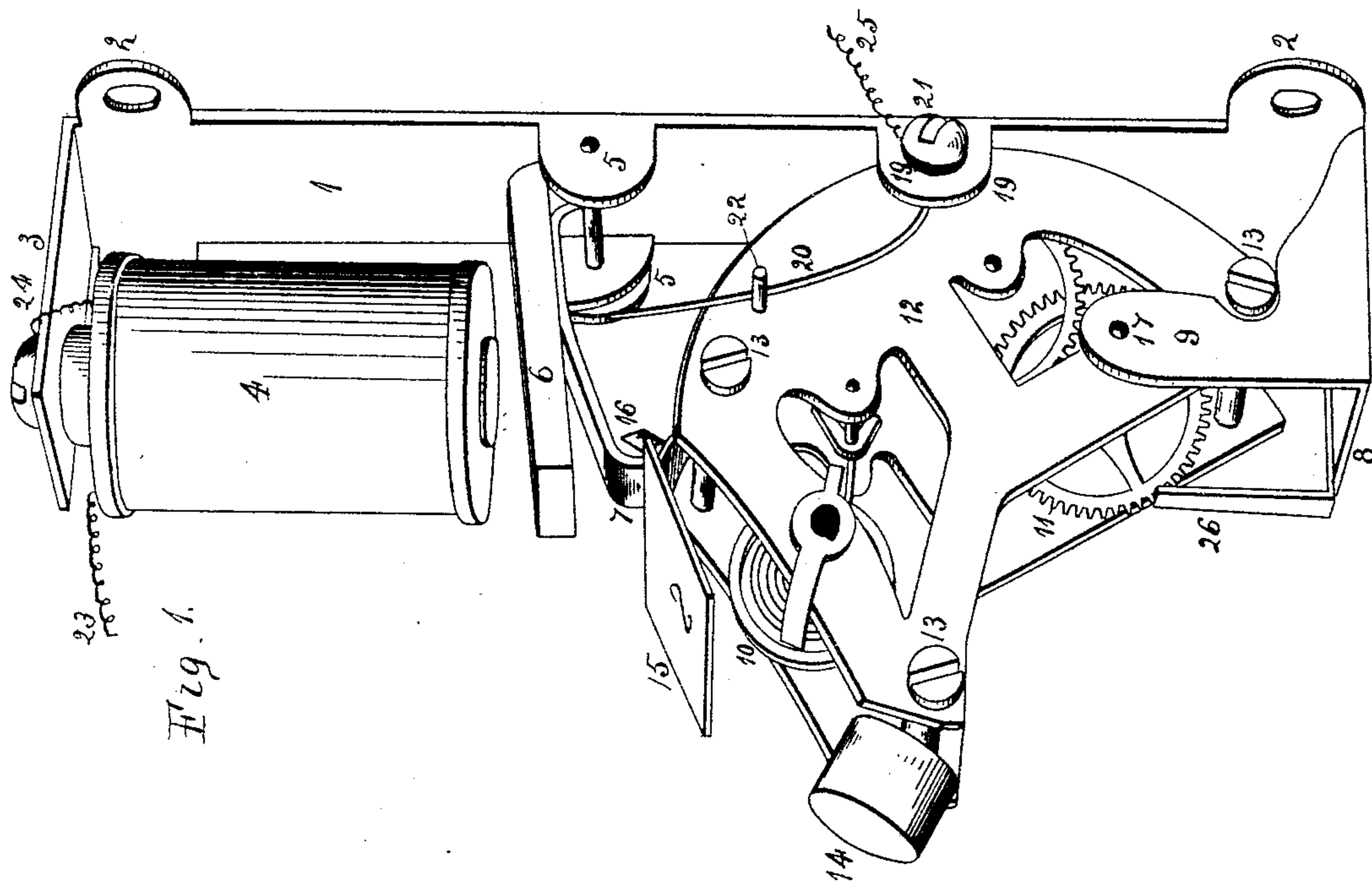


Fig. 1.

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UNITED STATES PATENT OFFICE.

DAVID S. SCHUREMAN, OF ROCKFORD, ILLINOIS.

ELECTRIC-CIRCUIT BREAKER.

SPECIFICATION forming part of Letters Patent No. 516,025, dated March 6, 1894.

Application filed July 19, 1893. Serial No. 480,963. (No model.)

To all whom it may concern:

Be it known that I, DAVID S. SCHUREMAN, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Electric-Circuit Breakers, of which the following is a specification.

The object of this invention is to construct a time circuit breaker employed in electric circuits, in order that the circuit may be broken at a certain length of time after being closed and is employed more especially in electric circuits in which vibrating bells are employed so that the bell will cease ringing a certain length of time after the circuit in which it was included had been closed, thereby saving the running down of the battery.

In the accompanying drawings,—Figure 1, is a perspective view of the circuit breaker in its normal position. Fig. 2, is also a perspective view of the circuit breaker after being released and the circuit broken.

The upright 1, is provided with perforated ears 2, by means of which it is secured to a base board and has its upper end 3, bent at right angles and to which is secured an electro magnet 4. Ears 5, are bent at right angles to its face between which is pivoted an armature 6, to the under side of which is secured a hook 7. From the lower end of the upright extends a base 8, having its sides bent vertically forming ears 9. A gear train composed of the balance wheel 10, main wheel 11, and the necessary intermediate wheels is supported in a frame composed of sides 12, held separated by the connecting bars and screws 13. A weight 14, is supported by the frame at its extreme outer end and an indicator plate 15, has a connection with the frame, and from which projects a pin 16. The frame has a pivotal connection with the ears 9, by studs or journals 17. From the upright extends an ear 18, provided with a central bushing of insulating material 19. A spring bar 20, is clamped in connection with the insulating bushing and a screw 21, holds the parts together. From the face of the side plate 12, extends a pin 22. A wire 23, connects with the coil of the electro magnet

4, the other end of the coil connected by a wire 24, to the upright 1, a wire 25, being connected to the spring bar 20. To the base 8, is secured a dog 26, its end engaging the teeth of the main wheel 11, of the gear train 11. This circuit breaker is employed in a circuit in which a vibrating bell is included. The bell, battery and circuit closer are located in a circuit connected to the wires 23, and 25 and when the circuit closer is open a circuit is had, the frame supporting the gear train is moved upon its pivotal connection with the upright, until the pin 16, is held by the hook 7, of the armature, the spring bar 20, resting against the pin 22, when the parts will appear as shown at Fig. 1. Upon closing the circuit by means of the circuit closer, the electro magnet will be energized, attracting the armature permitting the hook to become disengaged from the pin 16, allowing the gear train frame to move upon its pivot, the dog 26, engaging the teeth of the main wheel 11, and the weight of the frame and of the weight 14, in addition to the spring force of the bar 20, pressing against the pin 22, to rotate the gear train without the aid of the weight 14, or spring force of the bar 20, but it is necessary that the bar 20, remain in contact with the pin during the time it is desired the circuit should be held closed after it has been closed by the circuit closer. It is also evident that this arrangement may be employed to close a circuit instead of breaking a circuit, by locating the spring arm 20, in position to be engaged by the pin 22 upon its descent.

I claim as my invention—

1. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, one of the gears of the gear train held stationary during the running of the gear train an armature preventing the running of the gear train and an electro magnet exerting its influence upon the armature, thereby liberating the gear train.

2. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, one of the gears of the gear train

held stationary during the running of the gear train, a weight assisting the running of the train, an armature preventing the running of the gear train and an electro magnet exerting its influence upon the armature, thereby liberating the gear train.

3. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, one of the gears of the gear train held stationary during the running of the gear train, a spring assisting the running of the train, an armature preventing the running of the gear train and an electro magnet exerting its influence upon the armature, thereby liberating the gear train.

4. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, one of the gears of the gear train held stationary during the running of the gear train, the frame supporting an indicating plate, an armature preventing the running of the gear train and an electro magnet exerting its influence upon the armature, thereby liberating the gear train.

5. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, one of the gears of the gear train

held stationary during the running of the gear train, the frame holding an electric circuit closed when in its normal position and breaking the circuit during the running of the gear train, an armature preventing the running of the gear train and an electro magnet exerting its influence upon the armature, thereby liberating the gear train.

6. An electric time circuit breaker, consisting of a gear train supported in a frame having a pivotal connection with a stationary support, an armature holding the frame stationary an electro magnet when energized causing the armature to release the frame, and an electric connection with the frame, which is changed after the frame has been released.

7. An electric time circuit breaker consisting of a gear train supported in a frame having a pivotal connection with a stationary support, an armature holding the frame stationary an electro magnet for releasing the frame by acting upon the armature a dog engaging the gear train, and an electric connection with the frame, which is changed after the frame has been released.

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Witnesses:

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