

W. M. SCOTT.

AUTOMATIC MAGNET CIRCUIT BREAKER.

(Application filed Jan. 31, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

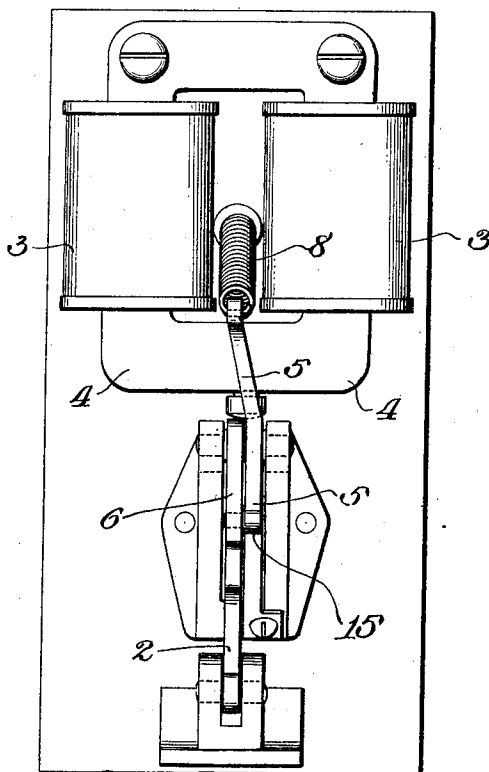
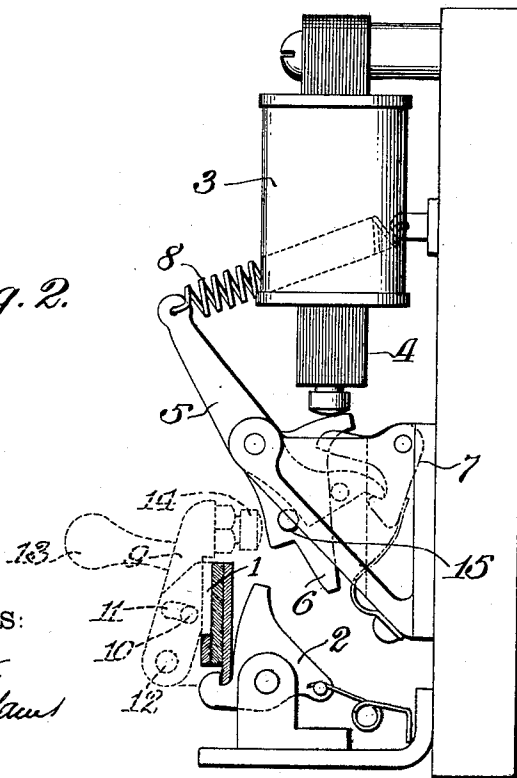


Fig. 2.



WITNESSES:

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INVENTOR

Wm M Scott
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att'y

No. 650,425.

Patented May 29, 1900.

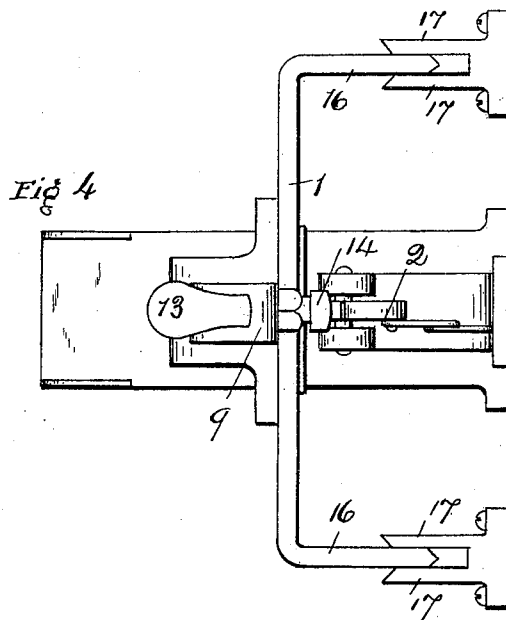
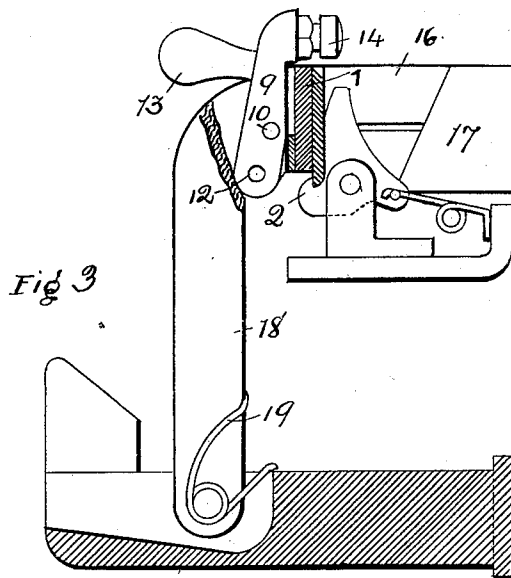
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WITNESSES:

John H. Revere Jr.
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UNITED STATES PATENT OFFICE.

WILLIAM M. SCOTT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE CUTTER ELECTRICAL AND MANUFACTURING COMPANY, OF NEW JERSEY.

AUTOMATIC MAGNET CIRCUIT-BREAKER.

SPECIFICATION forming part of Letters Patent No. 650,425, dated May 29, 1900.

Application filed January 31, 1898. Serial No. 668,539. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. SCOTT, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Automatic Magnetic Circuit-Breaker, of which the following is a specification.

My invention relates to automatic magnetic circuit-breakers; and among the objects of my improvement is to afford means for automatically opening the circuit upon the occurrence of a predetermined minimum or interrupted flow, and it is especially adapted for operation in connection with alternating currents. I accomplish this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the latching and releasing means of my device. Fig. 2 is a side view of same. Fig. 3 is a side view, in part section, showing movable and fixed contacts adapted to be used in connection with the means shown in Figs. 1 and 2. Fig. 4 is a top view of same.

Similar numerals refer to similar parts throughout the several views.

Referring to the drawings, 1 is the bridge, to which are connected the movable contacts 16 and which is adapted to engage with latch 2 to hold said movable contacts 16 in engagement with the fixed contacts 17. Above this latch 2 is fixed an electromagnet 3, the iron portions of which are laminated. The lever 5, the cam 6, and the latch 7 are pivotally fixed and adapted to operate intermediate the armature 4 and latch 2. Pivoted at 12 to the rear of bridge 1 is the member 9, having a pivotal movement limited by the pin 10, movable in slot 11. The handle 13 for the manual operation of closing the switch is mounted on this member 9.

The operation of manually closing the switch involves the forcing of member 9 forward against the rigid part of frame 1, so that its projection 14 will encounter the cam 6 and operate it to force the armature 4 against the pole-piece of the electromagnet 3, where it is held during the flow of current through the coils of the magnet. At the same time the

projection 15 of cam 6 encounters lever 5, causing its engagement with the latch 7 against the pull of spring 8. Upon releasing the handle 13 it falls back, carrying member 9 to the limit of its pivotal movement away from cam 6, permitting said cam 6 to fall away from armature 4 and rest its lower extremity upon latch 2. Upon interruption of current or a predetermined below-normal flow through magnet 3 the armature 4 leaves the magnet and actuates latch 7 to release the lever 5, which responding to the pull of spring 8 operates cam 6 to actuate latch 2 to permit the separation of the contacts 16 and 17.

What I claim is—

1. In an automatic magnetic circuit-breaker for breaking circuit when the current is interrupted or falls below a predetermined minimum, the combination of separable coöperative contacts, means for causing the separation of the same, means for normally restraining the separating means, spring-actuated means for releasing the restraining means, means for normally restraining the releasing means, and automatic magnet-controlled means for releasing the last-named restraining means when the predetermined condition arises, substantially as specified.

2. In an automatic magnetic circuit-breaker for breaking circuit when the current is interrupted or falls below a predetermined minimum, the combination of separable coöperative contacts, means for causing the separation of the same, means for normally restraining the separating means, an electromagnet and armature, and spring-actuated means intermediate the armature and said restraining means adapted, upon the release of the armature from the poles of its magnet, to be actuated to release the restraining means, substantially as described.

3. In an automatic magnetic circuit-breaker for breaking circuit when the current is interrupted or falls below a certain predetermined minimum, the combination of separable coöperative contacts, means for causing the separation of the same, a latch adapted normally to restrain said separation, an electromagnet and gravitating armature, and a spring-actuated normally-restrained lever

adapted, upon the release of the armature from the poles of its magnet, to be released to release the latch, substantially as described.

4. In an automatic magnetic circuit-breaker, 5 the combination of separable coöperative contacts, means for causing the separation of the same, a latch adapted normally to restrain said separation, an electromagnet and armature, a spring-actuated lever, a lever-latch 10 and cam all pivotally fixed and adapted to operate intermediate the armature and the latch restraining the movable contact actuation, the armature adapted to actuate the lever-latch, the lever adapted to actuate the cam to actuate the latch restraining the movable 15 contact actuation, substantially as described.

5. In an automatic magnetic circuit-breaker, the combination of separable coöperative contacts, means for causing the separation of the 20 same, a latch adapted normally to restrain said separation, an electromagnet and armature, spring-actuated means intermediate the armature and latch for releasing the latch and means for normally restraining the said 25 spring-actuated means and adapted to be actuated by the armature, substantially as described.

6. In an automatic magnetic circuit-breaker, the combination of separable coöperative con- 30 tacts, means for causing the separation of the same, a latch adapted normally to restrain said separation, an electromagnet and armature, spring-actuated means intermediate the

armature and latch for actuating the latch, means for normally restraining the said 35 spring-actuated means and adapted to be actuated by the armature and means for communicating the force, exerted in operating the movable contacts to engage with the fixed 40 contacts, to latch the spring-actuated means against spring tension and to force the armature into contact with the magnet, substantially as described.

7. In an automatic magnetic circuit-breaker, the combination of separable coöperative con- 45 tacts, means for causing the separation of the same, a latch adapted normally to restrain said separation, an electromagnet and armature, a spring-actuated lever, means for normally restraining said lever and adapted to 50 be actuated to release the same by the movement of the armature, means for communicating the movement of the lever to actuate the latch and a member connected with the closing-handle adapted to communicate the 55 force, exerted in closing the circuit-breaker, to cause the engagement of the lever with its restraining means and the armature with the poles of its magnet, and then to withdraw its obstruction to the return of the lever and ar- 60 mature, substantially as described.

WM. M. SCOTT.

Witnesses:

JNO. STOKES ADAMS,
E. F. GRACE.