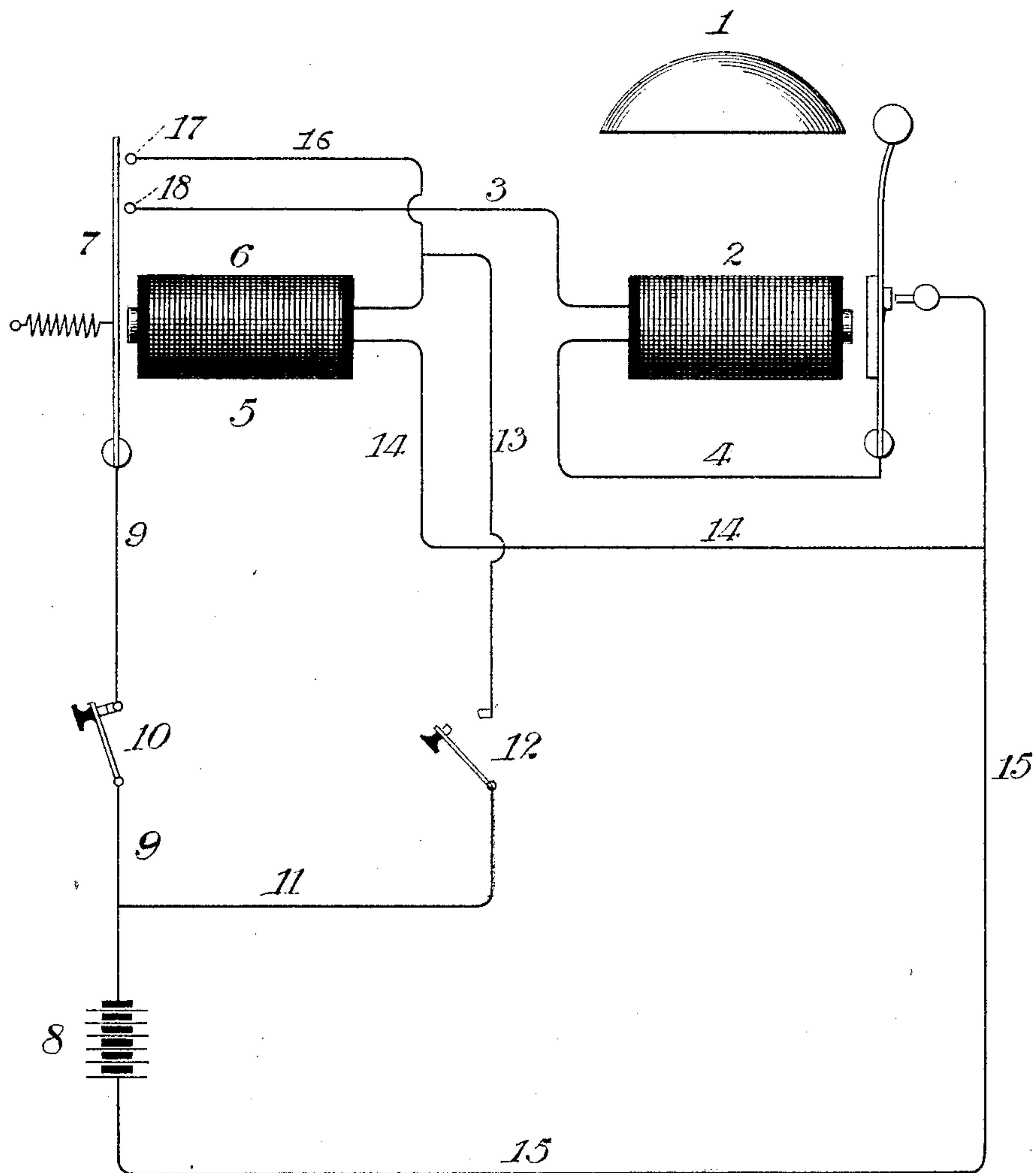


(No Model.)

A. L. CREELMAN.
ELECTRIC SIGNAL.

No. 584,463.

Patented June 15, 1897.



Witnesses:

A. R. Kennedy
E. Ahlby -

Inventor:

A. L. Creelman
By Philip T. Lodge
Att.

UNITED STATES PATENT OFFICE.

ALVAH LEWIS CREELMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CIRCUIT PROTECTING SOUNDER COMPANY, OF MEMPHIS, TENNESSEE.

ELECTRIC SIGNAL.

SPECIFICATION forming part of Letters Patent No. 584,463, dated June 15, 1897.

Application filed August 17, 1895. Renewed February 26, 1897. Serial No. 625,176. (No model.)

To all whom it may concern:

Be it known that I, ALVAH LEWIS CREELMAN, of Chicago, county of Cook, and State of Illinois, have invented a new and useful
5 Improvement in Electric Signals, of which the following is a specification.

The object of this invention is to provide an alarm or signal designed to be operated electrically by the closure of a main circuit
10 and to continue its operation after the circuit is opened again.

With this end in view my invention consists in combining with an electric bell, light, or equivalent electrically-operated signal or
15 indicating device a circuit-controller or relay and a series of electric circuits, including said devices, so arranged that on the momentary closure of a circuit, including the relay, the latter will act by the attraction of its ar-
20 mature to establish two circuits, one through the relay and one through the signal, the result being that the latter will be operated and will continue to operate after the first circuit is broken and until the second circuit, includ-
25 ing the relay, is positively interrupted.

The invention also consists in the details of construction and combination of parts hereinafter described and claimed.

The drawing represents a diagrammatic
30 view of my invention embodied in its preferred form.

In the accompanying drawing, 1 represents an electric bell of the usual construction designed to be operated by an electromagnet 2,
35 supplied by an electric current through conductors 3 and 4.

5 represents a relay or circuit-controller consisting of the usual electromagnet 6 and armature 7.

8 represents an electric battery or other
40 suitable source of electrical energy from which a conductor 9, including a normally-closed switch or push-button 10, extends and is connected to the armature 7 of the relay.
45 A second conductor 11 also extends from the battery and includes a normally open switch or push-button 12, from which a conductor 13 leads to the electromagnet 6, the current returning by conductor 14 and conductor 15 to
50 battery. From conductor 13 a branch circuit

16 extends and terminates in a contact-point 17 in position to be encountered by armature 7 when attracted by its magnet. The conductor 3, before alluded to, terminates in contact-point 18, situated adjacent to the arma-
55 ture and arranged to be encountered thereby, as in the first instance.

The above-described devices and circuits constitute an alarm which will operate continuously after the momentary closure of the
60 main circuit through push-button 12, the operation being as follows: When the normally open push-button 12 is operated, it establishes a circuit through the relay-magnet, through conductor 13, conductor 14, conductor 15, battery 8, and conductor 11. The magnet
65 will be energized and will attract its armature 7 and through contact-point 17 establishes a second branch circuit through the magnet, through conductor 16, conductor 14, conductor 15, battery 8, conductor 9, and ar-
70 mature 7. This circuit is independent of that first established and is therefore not affected by the opening of the same and will remain closed until the normally-closed push-button
75 10 is operated. The attraction of armature 7 establishes a third circuit, including the electric bell or alarm, through contact-point 18, conductor 3, magnet 2, conductor 14, conductor 15, battery 8, conductor 9, and arma-
80 ture 7. This circuit will remain closed and will operate the alarm continuously as long as the second circuit through the relay remains closed. When this second circuit is interrupted, the armature will be drawn by
85 its usual spring to its former position and the alarm-circuit broken and the parts will resume their normal positions.

Having thus described my invention, what I claim is—

90 In a continuously-operating alarm or signal apparatus, the combination with a normally open circuit, of a circuit-closer for controlling the same, a battery included in said circuit, a relay-magnet also included in the circuit,
95 an armature for said magnet, a normally open circuit including said battery, an alarm or signal and said armature, and adapted to be closed by the armature when the relay-magnet is energized, and a third normally open
100

circuit including the same battery, the said
armature, and excluding the circuit-breaker,
and adapted to be closed by the armature and
to remain closed when the first-named circuit
5 is open; whereby two circuits will be estab-
lished through the relay-magnet and one
through the alarm apparatus, all including
the same battery, when the circuit-closer is
momentarily closed, and whereby one only of

the circuits through the relay-magnet will be re-
opened.

In testimony whereof I hereunto set my
hand, this 21st day of June, 1895, in the pres-
ence of two attesting witnesses.

ALVAH LEWIS CREELMAN.

Witnesses:

C. A. GOODELL,

EDWARD D. RUNYAN.