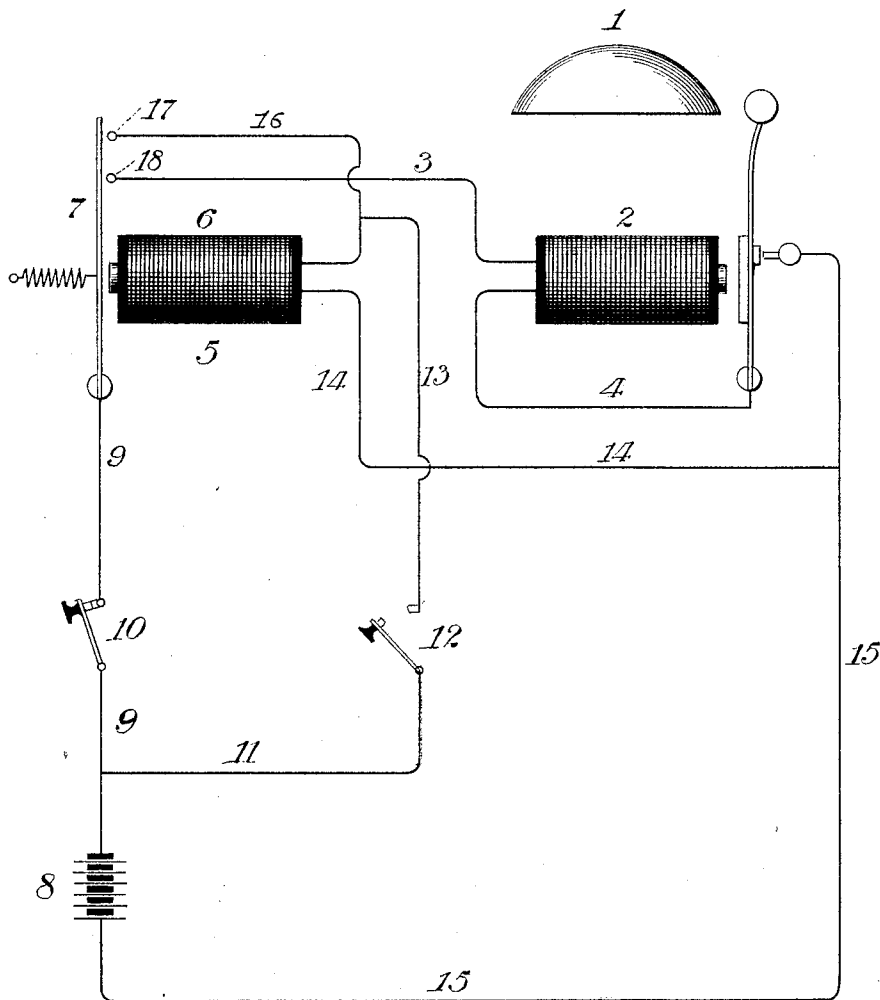


(No Model.)

A. L. CREELMAN.
ELECTRIC SIGNAL.

No. 584,463.

Patented June 15, 1897.



Witnesses:

M. R. Hennaf
E. Ahley -

Inventor:

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

UNITED STATES PATENT OFFICE.

ALVAH LEWIS CREELMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CIR-
CUIT 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 CREEL-
MAN, 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 con-
sists 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 mo-
mentary closure of a circuit, including the re-
lay, 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 re-
sult 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 here-
inafter described and claimed.

The drawing represents a diagrammatic
30 view of my invention embodied in its pre-
ferred form.

In the accompanying drawing, 1 represents
an electric bell of the usual construction de-
signed to be operated by an electromagnet 2,
35 supplied by an electric current through con-
ductors 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
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 re-
turning 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 con-
ductor 3, before alluded to, terminates in con-
tact-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 con-
tinuously after the momentary closure of the
60 main circuit through push-button 12, the op-
eration 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, 65
battery 8, and conductor 11. The magnet
will be energized and will attract its arma-
ture 7 and through contact-point 17 estab-
lishes a second branch circuit through the
magnet, through conductor 16, conductor 14, 70
conductor 15, battery 8, conductor 9, and ar-
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, con-
ductor 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 re-
mains 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 re-
sume 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-mag-
net 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 is open; whereby two circuits will be established 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 opened.

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

ALVAH LEWIS CREELMAN.

Witnesses:

C. A. GOODELL,
EDWARD D. RUNYAN.