

No. 656,434.

Patented Aug. 21, 1900.

E. W. VOGEL.
COMBINED VISIBLE AND AUDIBLE SIGNAL.

(Application filed July 7, 1899.)

(No Model.)

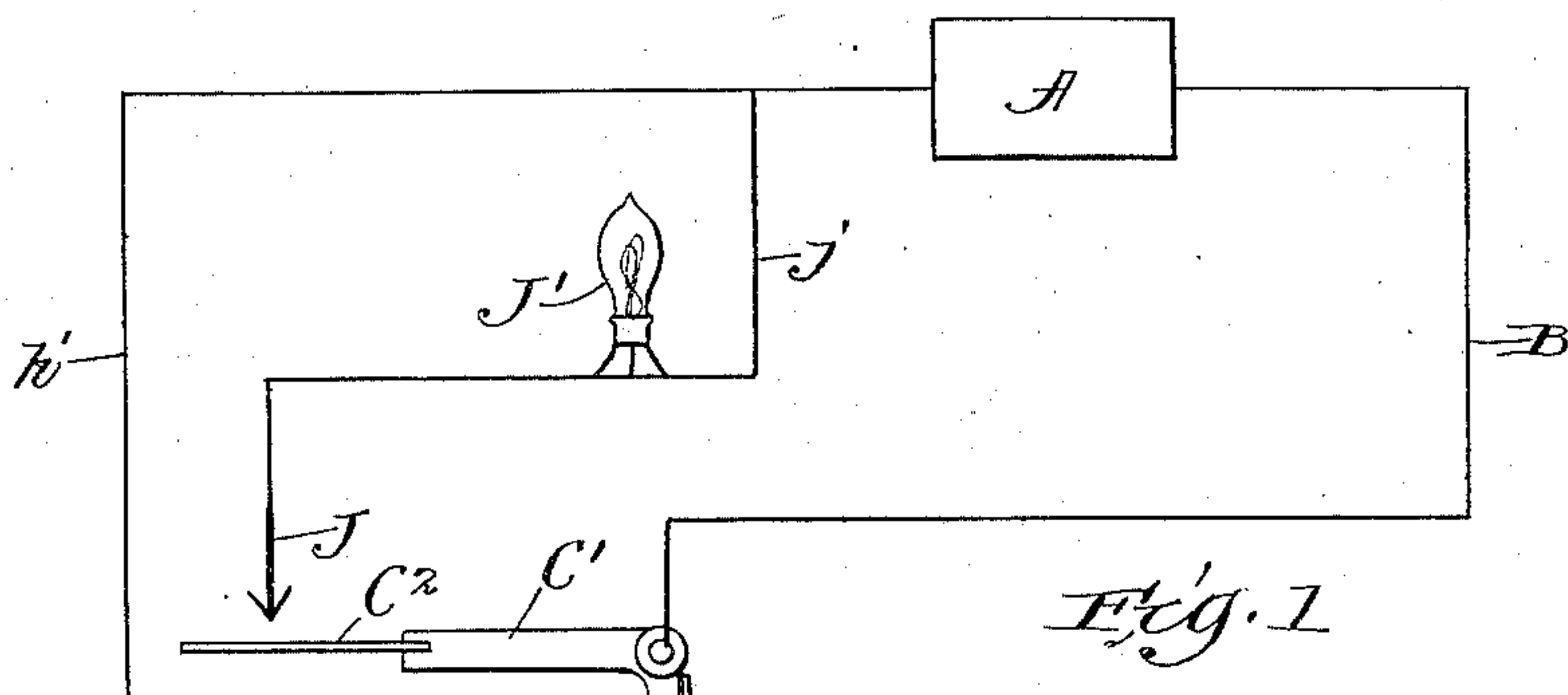


Fig. 1

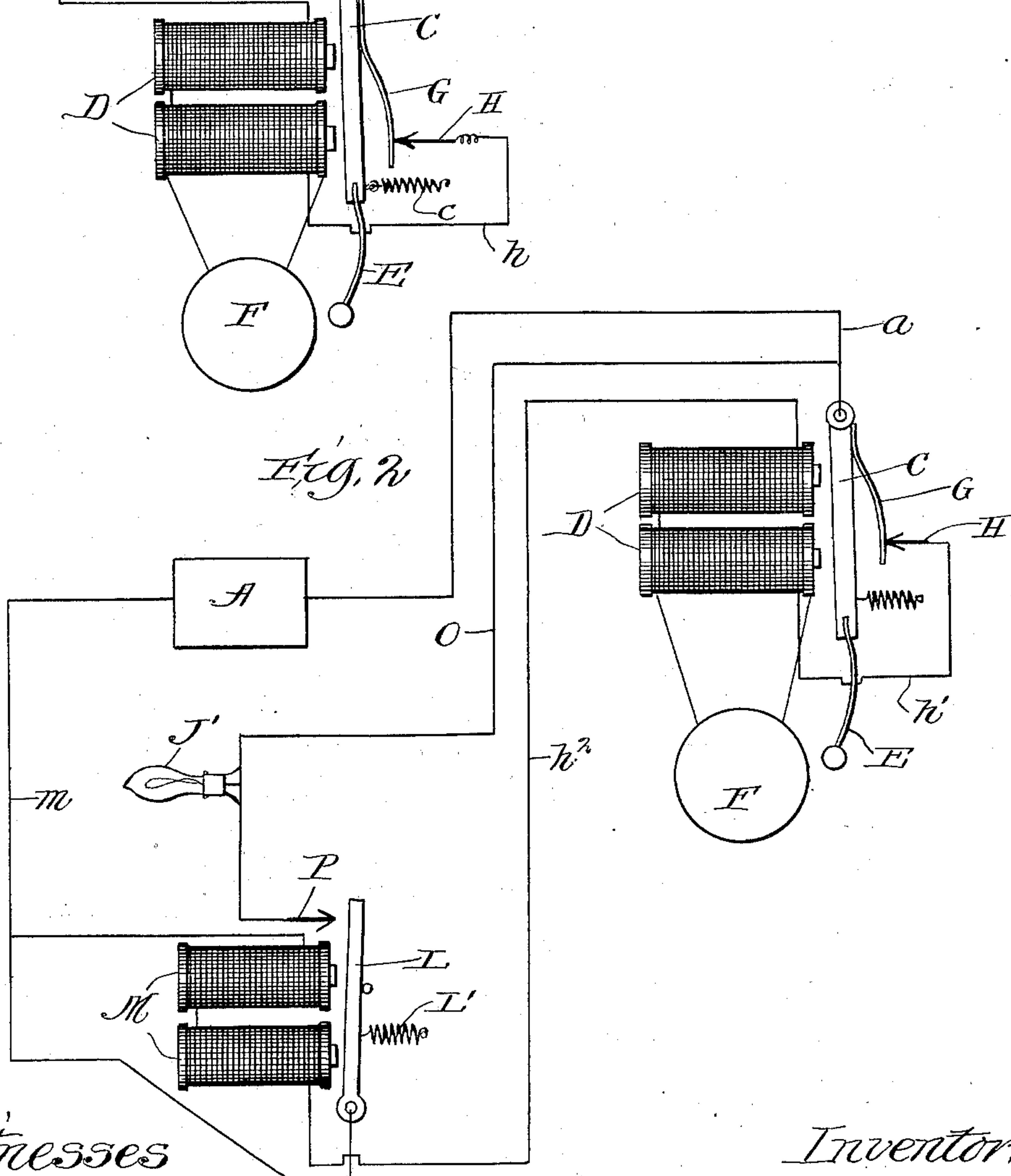


Fig. 2

Witnesses

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UNITED STATES PATENT OFFICE.

EUGENE W. VOGEL, OF CHICAGO, ILLINOIS, ASSIGNOR TO DAVID S. WEGG,
OF SAME PLACE.

COMBINED VISIBLE AND AUDIBLE SIGNAL.

SPECIFICATION forming part of Letters Patent No. 656,434, dated August 21, 1900.

Application filed July 7, 1899. Serial No. 723,024. (No model.)

To all whom it may concern:

Be it known that I, EUGENE W. VOGEL, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have
5 invented a certain new and useful Improvement in a Combined Visible and Audible Signal; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to
10 which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object the production of an apparatus for use more particularly
15 in connection with railway-crossing alarms, although it is not necessarily confined to these uses.

The invention is designed to provide a visible as well as an audible alarm; and to that
20 end it consists of the provision not only of the usual bell now employed at railway-crossings to sound an alarm, but also in the provision of a light whereby a visible alarm is
25 also provided. In an apparatus of this kind it is desirable that the visible alarm be in the nature of a flash-light. In my present apparatus I have so arranged the construction that the current now employed to ring the
30 bell at a crossing-signal may be alternately switched into and out of a circuit containing an electric lamp, so that the desired flash-light is provided.

The invention consists in a combination of
35 devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a diagrammatic view illustrating my invention where mechanical means are employed to switch the
40 current. Fig. 2 is a diagrammatic view illustrating my invention where electrical means are employed to switch the current.

I will first describe the apparatus illustrated by Fig. 1. A represents any suitable source
45 of electrical power, such as a battery, and combined therewith may be any suitable form of relay mechanism, it being sufficient, so far as the present invention is concerned, to describe the point marked A as the source of
50 electrical supply. Leading therefrom is a wire B, connected at any suitable point to the

arm C, the latter constituting the armature for the electromagnets D and also constituting the arm carrying the bell clapper or hammer E. F represents the bell. Engaged to
55 the arm C is a contact-piece G, normally in electrical contact with the contact-piece H. A spring c keeps the arm C normally away from the magnets. Leading from the points H is a wire h, which passes through the elec-
60 tromagnets, the wire h' leading thence back to the source of electrical supply A. Tapping the wire h' is a wire j, which extends to a contact-point J, an electric lamp J' being located on this wire j. Located on the arm
65 C is an arm C', carrying a contact C², which when the arm C is tilted forms an electrical contact with the joint J.

The operation of the device will now be understood. The current leaving the source
70 of supply A passes over the wire B, thence to the arm C through the contact G and contact-point H, thence through the wire h to the electromagnets D, thereby energizing the latter, and thence through the wire h' back to
75 the source of supply A. The energizing of the magnets D attracts the arm C and tilts the latter, thus causing the bell-clapper E to strike the bell and sound the latter. The movement of the arm C carries the contact
80 G away from the point H, and thus breaks the circuit. By this movement the arm C has carried the contact C² against the contact J, and the current is thereupon switched and travels through the wire B, through the arm
85 C', contacts C² and J, and thence through the wire j back to the source of supply A. This causes the current to pass through the lamp J' and lights the latter. As soon, however,
90 as the magnets D are deenergized by the breaking of the current G H the spring c returns the arm C to its normal position, thus establishing the connection at G H and breaking the connection at J C².

By the above means it will be seen that the
95 current alternately passes through the magnets D and taps the bell and alternately passes through the lamp J' and lights it, thus giving the latter the desired flash.

In Fig. 2 the operation is much the same. 100
A represents the source of supply, as in Fig. 1, with the wire a leading thence to the arm

C. There is the contact G and the contact-point H, with the wire H' leading thence to the electromagnets D and a wire h^2 leading from the latter to a contact-point K. At this point there is a pivoted arm L, constituting also the armature for the electromagnets M. The arm L is normally held in contact with the point K by the spring L'. From the magnets M a wire m leads back to the source of electrical supply A. Tapping the wire a between the source of electrical supply and the arm C is a wire O, leading to a contact-point P adjacent to the arm L and so arranged that when the arm L is attracted by the magnets M the arm L will come in contact with the contact-point P. On the wire O is a lamp J'. The operation of this apparatus will at once be seen. The current passes over the wire a , through the arm C, contacts G H, wires h' , through the electromagnets D, thus energizing the latter and attracting the arm C and tapping the bell, thence through the wires h^2 , contact-point K, arm L, and magnet M, thus energizing the latter and attracting the arm L. This throws the arm L over against the contact-point P. From the electromagnets M the current passes over to the wire m to the source of power A. When the arm L is tilted, however, it breaks its contact with the point K and contacts with the point P. The current thereupon is switched over the wire O, through the light J', through the arm L, through the magnets M, and wire m back to the source of supply A.

It will be seen from the above description

that in both the forms shown I have provided a switch whereby the whole current is alternately switched through the bell and then through the light. This is of material advantage over a construction wherein the current is divided, part of it going through the bell and part of it through the alarm. Another material advantage over a structure such as I have just described is that there is a positive alternate connection and disconnection of the circuit into which the lamp is located, so that a positive flash of the lamp is obtained.

It is obvious that the particular system of wiring and the particular arrangement of the parts and the particular construction of the parts might be materially altered without departing from the spirit of my invention, which consists, essentially, in the provision of a switch mechanism for positively switching the entire current alternately through the bell and through the lamp.

What I claim is—

In a combined audible and visible signal, the combination with a source of electrical supply, of a bell located in a circuit and a lamp located in another circuit, and switch mechanism acting automatically to alternately throw a current through the bell and through the lamp, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

EUGENE W. VOGEL.

Witnesses:

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GERTRUDE HEIDELBERGER.