

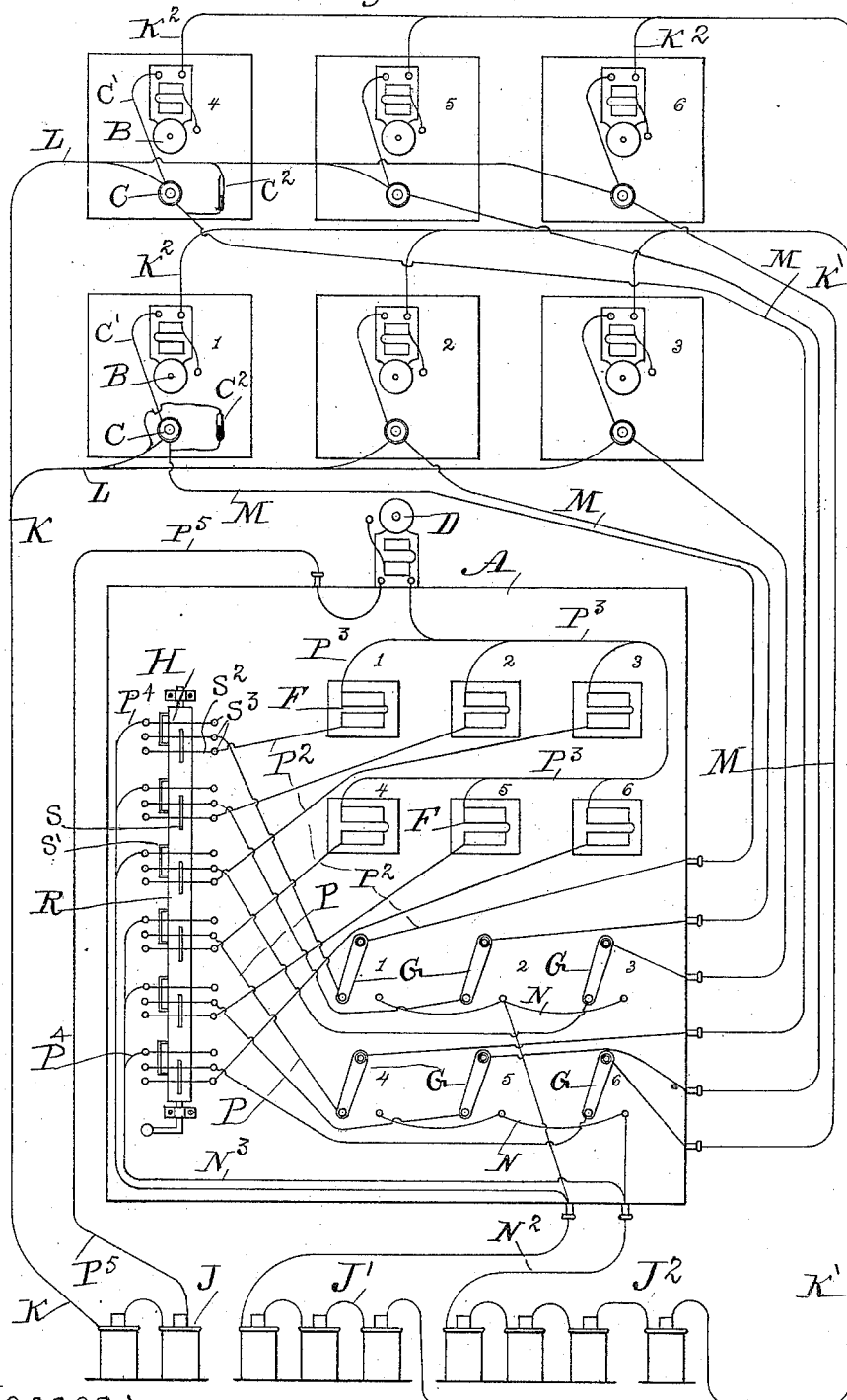
A. T. HESS.

ELECTRIC ANNUNCIATOR AND FIRE ALARM.

No. 341,909.

Patented May 18, 1886.

Fig. 1



Witnesses:

W. Anderson, }  
 Orra H. Moore, }

Inventor: Albert T. Hess,  
 By Thomas G. Orwig, Attorney.

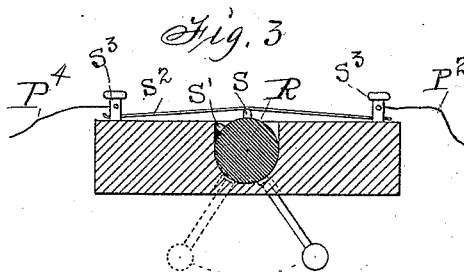
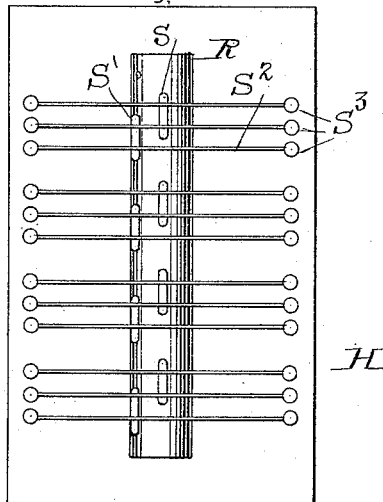
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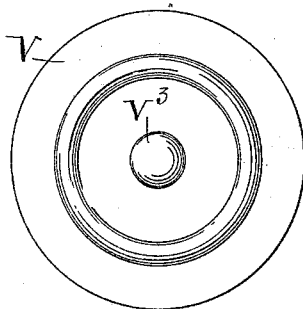
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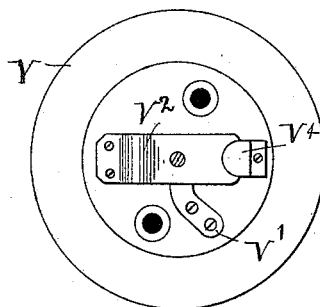
*Fig. 2*



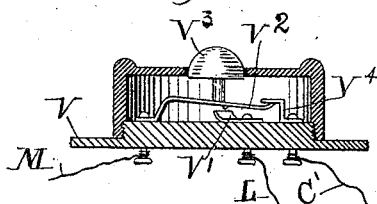
*Fig. 4*



*Fig. 5*



*Fig. 6*



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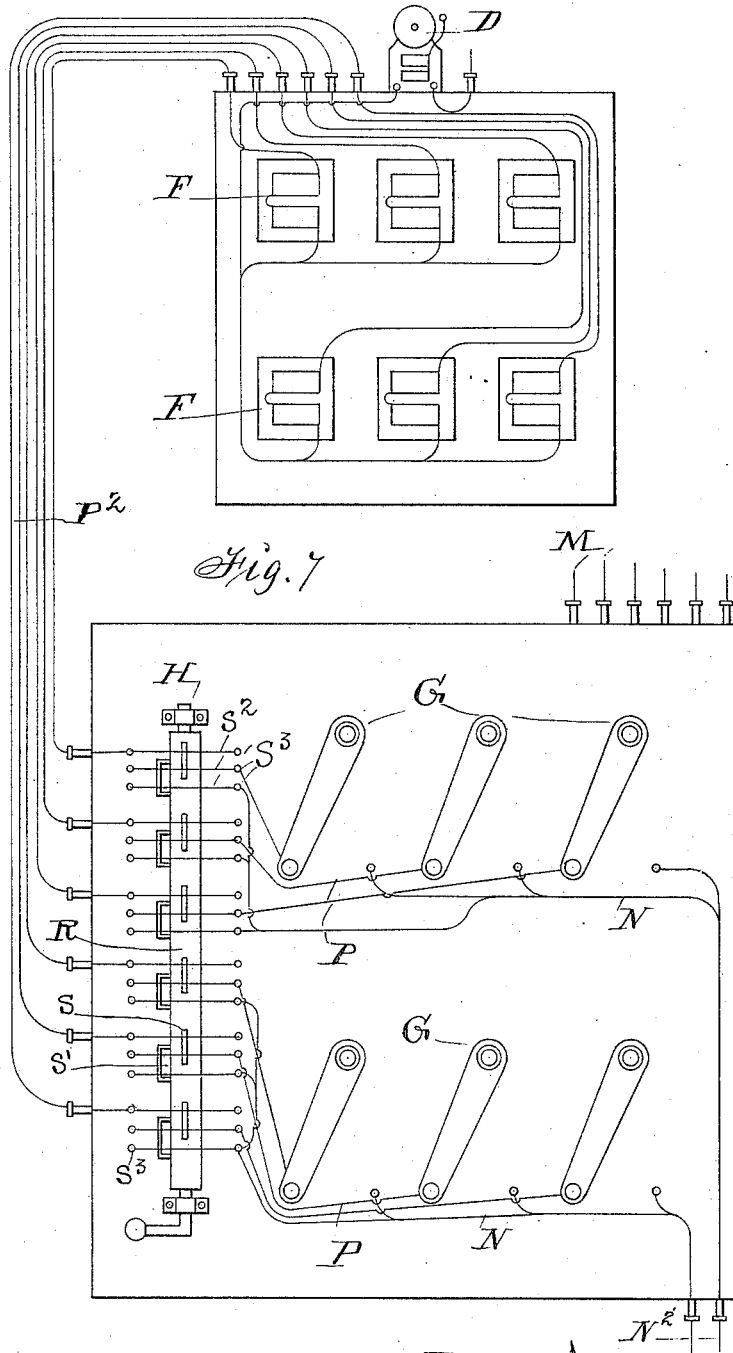
By Thomas G. Orwig, Atty.

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# UNITED STATES PATENT OFFICE.

ALBERT T. HESS, OF DES MOINES, IOWA.

## ELECTRIC ANNUNCIATOR AND FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 341,909, dated May 18, 1886.

Application filed June 16, 1884. Serial No. 134,938. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT T. HESS, of Des Moines, in the county of Polk and State of Iowa, have invented an Improvement in Electric Annunciators and Fire-Alarms, of which the following is a specification.

My invention relates to the method of constructing circuits for operating electric call and alarm bells in connection with electric annunciators; and my object is to utilize a part of the conductors of an annunciator to form a part of the conductors of an electric call and alarm bell system.

My improvement consists in combining bells and circuit-closers having two contact-points and located in various rooms, an annunciator-bell and series of visual signals located in an office or central station, and switches adapted to transmit a current from one circuit to another, a switch located in the same office or central station and adapted to simultaneously close a circuit with each bell in each room, and a battery or series of batteries adapted to actuate all the operative parts, as hereinafter fully set forth.

Figure 1 of my accompanying drawings is a plan view showing my apparatus in position as required for practical use. Fig. 2 is a top view, and Fig. 3 a transverse section, of my switch adapted for operating all the bells in all the rooms simultaneously. Fig. 4 is a top view of a complete double-acting circuit-closer. Fig. 5 shows the cap removed from Fig. 4. Fig. 6 is a transverse section of the double-acting circuit-closer. Fig. 7 is a plan view showing the call and alarm bells detached from the annunciator at the office, and also shows in a general way how the return-call system can be attached to annunciators that are already in use.

Jointly considered, these figures clearly illustrate the construction, application, operation, and utility of my complete invention.

A represents a base located in a central station or office and adapted to support an annunciator-bell or other signaling device, a series of visual movable signals, a series of switches or circuit-closers for operating bells or other signaling devices in a corresponding series of rooms or separate points, and a gen-

eral switch or circuit-closer for simultaneously operating all the bells in all the rooms.

B B represent call-bells or other signaling devices in a series of rooms, and C push-button circuit-closers. Three conducting-wires extend from each circuit-closer C, one, C', to the bell B in the same room, one to a switch or circuit-closer in the office, and the other to a return-wire leading to the battery J in the office.

C<sup>2</sup> represents a thermostat circuit-closer of any desired character, connected in a shunt-circuit around the push-button in a well-known manner.

D represents an annunciator-bell or other signaling device in the office and attached to the base A.

F F represent a series of electro-magnets to operate visual signals attached to the base A and to be operated by the circuit-closers C.

G G represent a series of switches or circuit-closers attached to the base A, to operate the bells B successively.

H represents a switch or general circuit-closer attached to the base A, and adapted to operate all the bells B simultaneously.

J J' J'' represent a series of batteries adapted to transmit currents of electricity to all the operative parts in the office and rooms throughout the building.

By the use of distinct batteries the signal-bells in rooms on separate floors in a building may be connected with one of the distinct batteries, as shown and described in the United States Letters Patent No. 288,570, issued to me November 13, 1883, and operated independent of the other batteries, so that the aggregate force of all the batteries will not be used to accomplish the work which any one of the series can do equally well, but will be held in reserve to ring all the bells simultaneously, which result cannot be accomplished with any single battery so as to distribute the current evenly to all the floors in a building, as required to ring all the bells in the building with uniform force.

K is a wire extending from the batteries J to the series of rooms, and connected with each circuit-closer, C, by means of a branch wire, L.

K' is a wire extending from one pole of the batteries J' and J<sup>2</sup> to the series of rooms.

K<sup>2</sup> are branch wires extending from the wire K', and each one is connected with one of the posts of one of the bells B.

M are wires extending from the circuit-closers C in the rooms to the switches or circuit-closers G in the office.

N are branch wires extending to one point of each switch G. Each wire N is connected with one of the series of batteries J' and J<sup>2</sup> by a wire, N<sup>2</sup>.

P are wires extending from each switch G to the general circuit-closer H.

P<sup>2</sup> are wires extending from the circuit-closer H to the electro-magnets F of each visual signal, and each electro-magnet is connected with the annunciator-bell or other signaling device D by means of a branch wire, P<sup>3</sup>.

P<sup>4</sup> are wires extending from the circuit-closer H to one of the wires N<sup>3</sup>, connected with the wires N<sup>2</sup>.

P<sup>5</sup> is a wire extending from the battery J to the annunciator D.

R is the main portion of the general circuit-closer or switch H, which may be constructed in various ways, as found convenient. The one shown is in the form of a non-conducting bar or rod attached to the base A, or any other convenient place near the base A, in such a manner that it can be revolved on its longitudinal axis by means of a handle that extends therefrom.

S and S' represent conducting-rods projecting from the bar R in two distinct rows.

S<sup>2</sup> are short wires or springs fixed to posts S<sup>3</sup> or in any suitable way to project across the switch-bar R in such a manner that when the switch is in its normal condition, as shown in Fig. 1, the wires P and P<sup>2</sup> will be electrically connected with one of the conducting-rods S; but by turning the switch-handle to the right, and thereby revolving the bar R, the wires P and P<sup>2</sup> will disconnect from the rods S, and the wires P and P<sup>4</sup> will connect in the same manner with the armatures S' in the other row. It is therefore obvious that by rocking the bar R of the general circuit-closer by means of its handle, it opens the annunciator-circuit and closes the circuit through all the bells in all the rooms through the batteries J' and J<sup>2</sup>. Where there is a large number of bells to be sounded all at once from any one point, it is evident it will take a large amount of battery-power, and that in such a case I can use a magneto-electric generator in place of the battery.

V is the base of the double-acting circuit-closer.

V' is a spring fixed on top of the base and connected with a wire, L, by means of a post or in any suitable way.

V<sup>2</sup> represents a spring fixed on the base and connected with a wire, M.

V<sup>3</sup> is a button fixed to the armature V<sup>2</sup>.

V<sup>4</sup> is a spring overlapping and electrically connected with the spring V<sup>2</sup> and connected

with the bell B by the wire C'. By pressing on the button V<sup>3</sup> the spring V<sup>2</sup> will be disconnected from the spring V<sup>4</sup> and connected with the spring V'.

In the practical operation of my invention should the clerk or operator in the office wish to call or alarm a guest at any given time, he need only turn one of the switches G from the wire P to the wire N, when a circuit will be formed starting from one pole of the battery through the wire N<sup>2</sup> to the wire N, the switch G, the wire M, the circuit-closer C, the wire C', and the bell B, and from thence back to the other pole of the battery through the wires K<sup>2</sup> and K'.

If a guest in any room wishes to signal to the office, he need only press upon the button V<sup>3</sup> in the room, when the spring V<sup>2</sup> will disconnect from the spring V<sup>4</sup> and connect with the spring V', when a current of electricity will start from one pole of the battery J through the wire K, the branch wire L, the circuit-closer C, the wire M, the switch G, the wire P over the rod S on the general circuit-closer, the wire P<sup>2</sup>, the electro-magnet F, the wire P<sup>3</sup>, the annunciator-bell or other signaling device, D, and from thence back to the other pole of the battery through the wire P<sup>5</sup>.

If the clerk or operator in the office wishes to give a general alarm in case of fire or other emergency, he need only turn the switch-handle from left to right, when the wires P and P<sup>2</sup> will disconnect from the rod S, and the wires P and P<sup>4</sup> will connect with the rod S' in the next row and throw the annunciator out of the circuit and start currents of electricity from one pole of the batteries J' and J<sup>2</sup> through the wires N<sup>2</sup> and N<sup>3</sup>, the branch wires P<sup>4</sup> over the rods S' through the wires P, the switches or circuit-closers G, the wires M, the circuit-closers C, the wires C', the bells B, and from thence back to the other pole of the batteries through the wires K<sup>2</sup> and K'.

The wires K and K' can be dispensed with by using a gas or water pipe, or the ground.

I am aware that an electric bell and double-contact circuit-closer in a room, an annunciator in an office or central station electrically and permanently connected with a single-contact circuit-closer in an office or central station, and two distinct batteries, have been combined for the purpose of signalling from the room to the office, and vice versa; but my combination of an electric bell and double-contact circuit-closer in a room, and an annunciator and double-contact circuit-closer in an office or central station, with two distinct batteries, so that there will be no electric current through the annunciator-coils in making a return-signal from the office to the room, is novel and greatly advantageous.

I claim as my invention—

1. In an electric annunciator and alarm, the combination of electric bells and double-contact circuit-closers or their equivalents in the rooms of a building or at separate points, an annunciator device and double-contact circuit-

closer or their equivalents in an office or central point, and two or more independent batteries, to operate in the manner set forth, for the purposes specified.

- 5 2. In an electric annunciator and alarm, the combination of electric bells or their equivalents, and double-contact circuit-closers in the rooms of a building or at separate points, an  
10 annunciator device and double-contact circuit-closers in an office or central point, two or more batteries or their equivalents, and the proper conductors, whereby a call can be made from a room to the office by changing the double-contact circuit-closer in the room, or  
15 a call made from the office to the room by changing the double-contact circuit-closer in the office, and each such call being operated from a separate battery, for the purposes set forth.
- 20 3. The combination, in an electric call and alarm bell system, of call-bells and double-contact circuit-closers in the room of a building or at separate points, an annunciator de-

vice and double-contact circuit-closers in an office or central station, a general switch adapted to separate and transfer currents to different points, and to connect a series of batteries for the purpose of distributing their joint force simultaneously to numerous bells at separate points, and a series of batteries or their equivalents to ring each series of bells with uniform force, substantially as set forth, for the purposes specified.

4. In an electric annunciator and alarm, the combination of electric bells and double-acting circuit-closers in the rooms of a building or at separate points, an annunciator device, double-acting circuit-closers, and one or more general circuit-closers in an office or central point, two or more independent batteries, and the proper conductors, as shown and described, for the purposes set forth.

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Witnesses:

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