

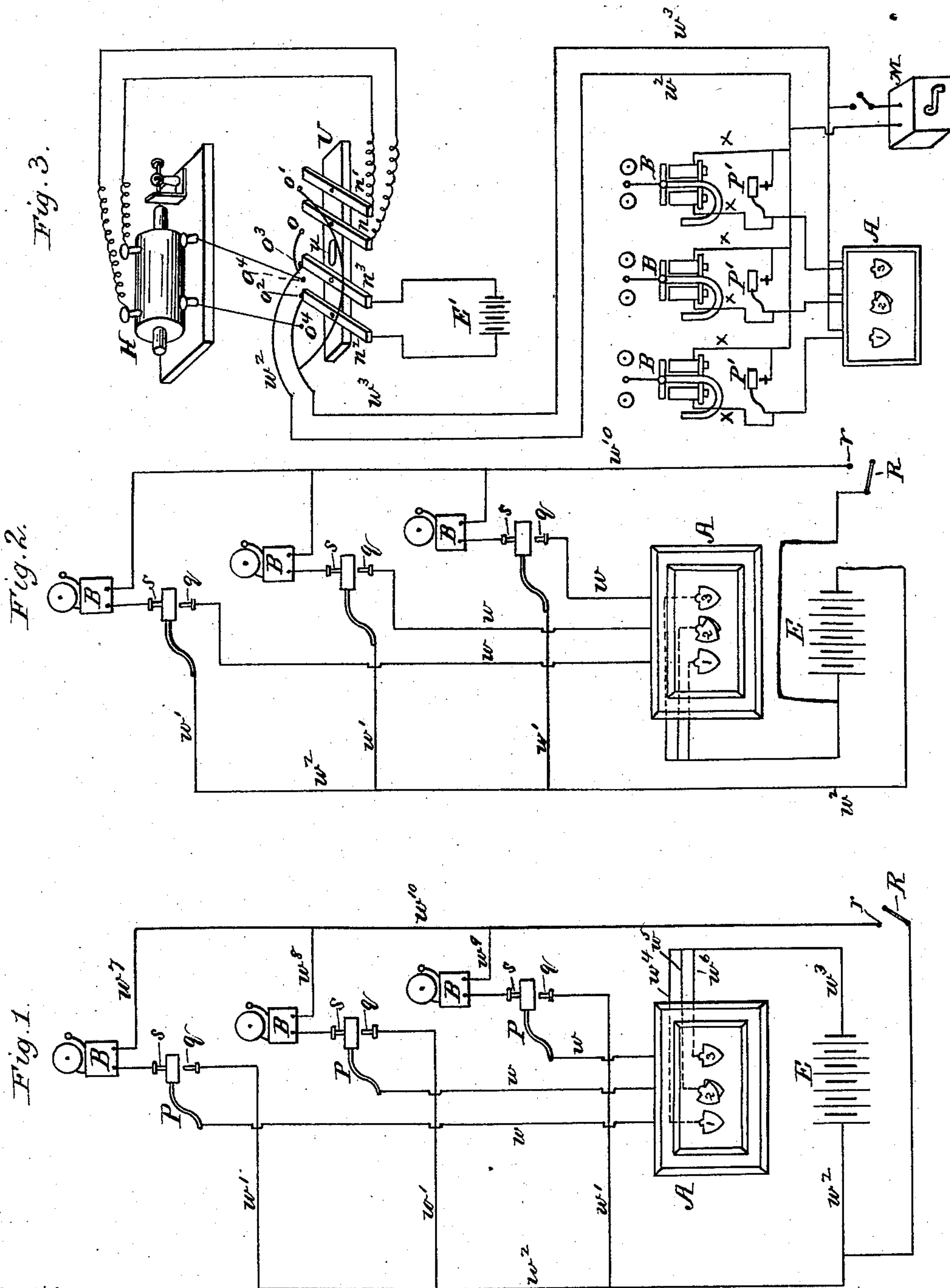
(No Model.)

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COMBINED ANNUNCIATOR AND ALARM SYSTEM.

No. 286,970.

Patented Oct. 16, 1883.



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UNITED STATES PATENT OFFICE.

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COMBINED ANNUNCIATOR AND ALARM SYSTEM.

SPECIFICATION forming part of Letters Patent No. 286,970, dated October 16, 1883.

Application filed February 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, ELMER A. SPERRY, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in a Combined Annunciator and Alarm System, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improved construction of circuits for operating electrical alarms in connection with annunciator systems, its object being to utilize the conductors, or portions thereof, of an annunciator system to form portions of a circuit, including electric alarm-bells, located at or near the various push-buttons or other circuit-closing devices by which an annunciator is operated from various points, such as the rooms of a hotel, the circuit including the alarm-bells, including also a circuit-closer, which is located at a central point, such as the office of a hotel, so that the bells may all be operated simultaneously from the office to alarm the inmates of the rooms, as in the case of fire or for any other purpose.

The invention consists in the novel combination, with the conductors of an annunciator system, of supplementary conductors forming a bell-circuit in connection with said annunciator system, as will be hereinafter particularly described.

In the accompanying drawings, Figure 1 is a diagram illustrating my invention. Figs. 2 and 3 are diagrams illustrating modifications thereof.

Referring to Fig. 1, the letter A indicates a portion of an annunciator showing three drops. From one terminal of the magnet of each drop a circuit-wire, w , leads to a push-button, P, these push-buttons being located, say, in different rooms of a hotel and adapted to make contact with suitable contact-points or anvils, q , which are connected by wires w' with a return-wire, w^2 , which is connected with one pole of a battery, E, the other pole of which is connected by a wire, w^3 , and branch wires w^4 and w^5 and w^6 with the terminals of the magnets, opposite their terminals, which are connected with the push-buttons. The

arrangement of conductors now described form a circuit such as is ordinarily used in annunciator systems. These push-buttons, however, are somewhat peculiar in construction, being double-acting—that is, having back as well as front contacts.

The letter s designates the back contacts of the push-buttons with which said buttons are normally in contact. Each of these back contacts s is connected with one terminal of the electro-magnet of an adjacent electric bell, B, the opposite terminals of the bell-magnets being connected by wires w^7 w^8 w^9 with an extra return-wire, w^{10} , leading from the contact-plate r of a switch-lever, R, which is connected with the same pole of battery E, to which the main return-wire w^2 is connected. The switch R is left normally open. It will now be obvious that when either of the push-buttons is depressed to make contact with its front stop, q , the annunciator-drop corresponding to said push-button will be operated in the ordinary manner without affecting the bell B, and it will also be obvious that when the switch R is closed the bells will all be operated, being connected in multiple arc with the battery E.

Should a fire break out in a hotel provided with my improvement, the inmates of all the rooms may be quickly notified by the closing of the switch R by the hotel clerk, watchman, or any other designated person. The switch R may be replaced by a thermostatic circuit-closer of any well-known construction, and thus an automatic fire-alarm will be provided in connection with the annunciator system.

It is obvious that the bells may be connected in series instead of multiple arc, and it will be readily understood that all the rooms of a hotel connected with the various drops of the annunciator may be provided with bells included in the alarm system, and these bells may all be rung independently of the annunciator.

The only difference between diagrams 1 and 2 is that in the latter diagram the push-buttons are normally connected with the main return-wire w^2 instead of with the wire w , leading direct to the drop-magnets.

In the diagram, Fig. 3, ordinary single-act-

ing push-buttons, P' , are used, and the bell-magnets are included in derived circuits formed by wires $x x$, connected with the push-buttons and their anvils, respectively, the extra return-wire being dispensed with. The resistance of the derived circuits is so arranged that the bells will not be operated by the ordinary annunciator-battery, but require a stronger current to be thrown on the circuit. When, however, the push-buttons are closed, their respective drops will be operated at the annunciator. For providing the additional current required for operating the bells, I may use a magneto-electric generator, M , connected in a well-known manner, as shown in the drawings, and said magneto-generator may be used alone or as supplementary to an induction-coil, H . This induction-coil has the terminals of its secondary circuit connected with pivoted metallic arms $n n'$, which are adapted to be swung into or out of contact with contact-plates $o o'$, which are connected with the main and return wires $w^2 w^3$ of the annunciator system.

The battery E' has its poles respectively connected with two metallic arms, $n^2 n^3$, which are adapted to be swung into contact with the contact-plates $o^2 o^3$, which are also connected with said main and return wires; or said arms may be swung into contact with the plates o^4 , which are connected with the respective terminals of the primary circuit of the induction-coil. The metallic arms $n n' n^2 n^3$ are connected together by non-conducting bar U , which is pivoted to each of said arms, and provided with a button or handle, u , by which it may be operated.

When the arms $n n' n^2 n^3$ are placed in the position as shown in Fig. 3, it will be seen that the battery is connected with the annunciator-circuit directly, and when in this position, if a fire should break out or it should become desirable for any other cause to ring the bells, a current of extra strength may be thrown on the annunciator-circuit for that purpose by moving the bar U so as to bring the arms $n n'$ into contact with the plates $o o'$, and the arms $n^2 n^3$ into contact with the plates o^4 . The battery will be thus connected with the primary circuit of the induction-coil and the secondary circuit of said coil will be connected with the annunciator-circuit, as before described. By making and breaking the contacts of the arms strong induced currents will be caused to flow from the induction-coil over the system of annunciator-conductors, and these currents will also be strong enough to traverse the derived circuits in which the bells are included, and cause said bells to be rung, polarized bells being preferably used in the modification of the system illustrated in Fig. 3.

In the modification shown in Figs. 1 and 2 either single-acting or continuously-vibrating bells may be used, and when single-acting bells are employed an automatic or continuously-vibrating circuit maker and breaker may be included in circuit with said bells, so that when the switch R is closed said bells will continue to operate.

The bells may be arranged in sectional circuits where there are a great many, and an auxiliary battery may be arranged to be thrown upon the sections successively for ringing the bells.

Having now described my invention and explained the operation thereof, I wish it to be understood that I do not confine myself to the specific arrangements of circuits or construction of devices as shown in the drawings, but may vary the same in any manner for the more perfect carrying out of the essential principles of my improvement without departing from the true spirit and scope thereof.

What I claim is—

1. The combination, with the wires of an annunciator system, substantially as described, and double-acting push-buttons arranged to actuate the annunciator-drops, of an extra return-wire, electric alarms included in branches running to said extra return-wire, contacts normally closed by the double-acting push-buttons for including each of said alarms in circuit, and suitable devices for causing an electric current to flow over the alarm-circuit independently of the annunciator, substantially as described.

2. In a combined electric annunciator and alarm system, the combination, with the main circuit and battery and the series of annunciator branches connected in multiple-arc with said main circuit, of the normally-open circuit-closers in each of said branches, and a separate bell-circuit connected with each of said circuit-closers and adapted, when the circuit-closers are in normal condition, to convey a current through the bell-magnet when the main circuit is closed, but rendered incapable of being operated by the battery when said circuit-closer is closed to operate the annunciator and the switch for connecting said separate bell-circuit operatively with the battery and disconnecting it therefrom, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER A. SPERRY.

Witnesses:

W. B. WRIGHT,
HENRY D. SMALLEY.