

J. H. CROSTER.
 EMERGENCY MEANS FOR ELECTRICAL DISTRIBUTION SYSTEMS.
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1,043,001.

Patented Oct. 29, 1912.

FIG. 1 -

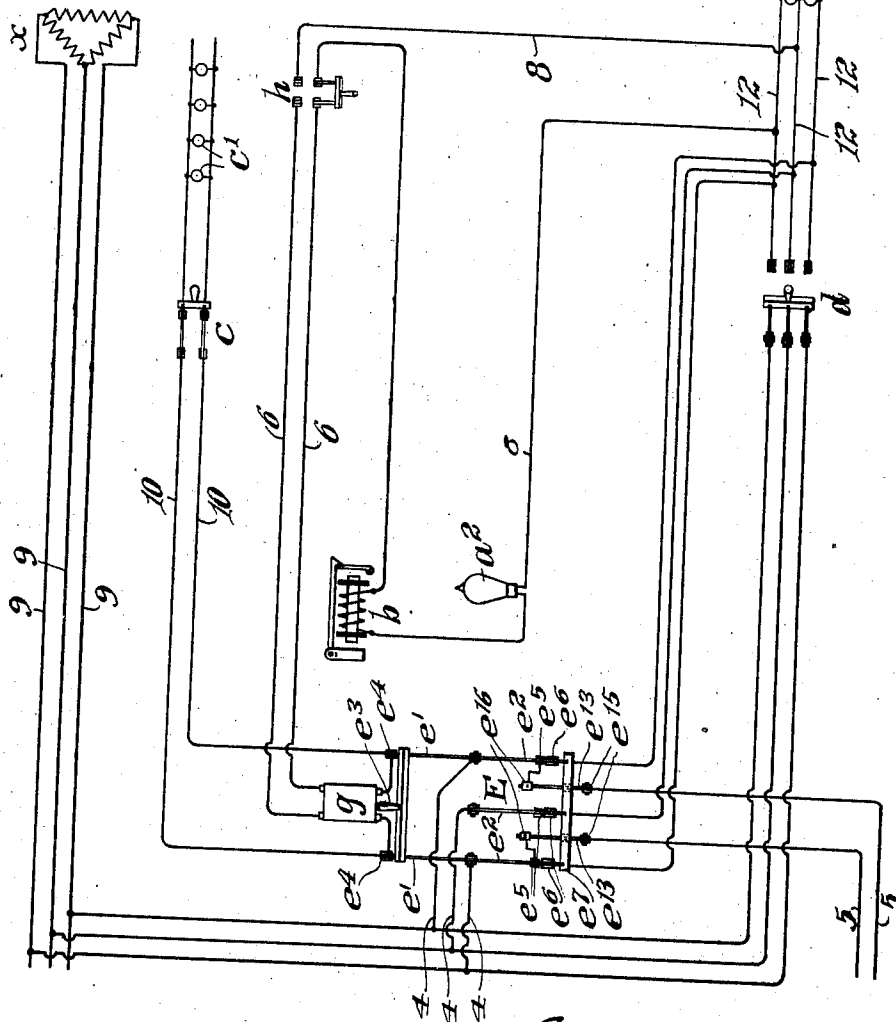


FIG. 2 -

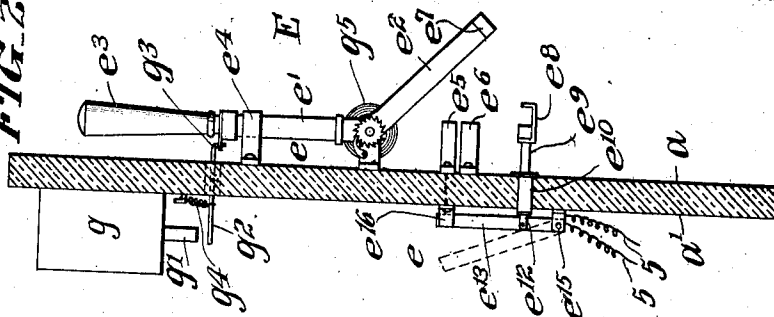
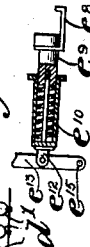


Fig. 3.



WITNESSES
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EMERGENCY MEANS FOR ELECTRICAL DISTRIBUTION SYSTEMS.

1,043,001.

Specification of Letters Patent.

Patented Oct. 29, 1912.

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To all whom it may concern:

Be it known that I, JOHN H. CROSIER, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Emergency Means for Electrical Distribution Systems, of which the following is a specification.

My invention relates in an electrical distribution system to an emergency means, electrically operated and either manually or automatically controlled from points remote to a switch-board through which certain appliances or elements are thereby regulated or controlled.

The nature and scope of my present invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, in which—

Figure 1, is a diagrammatic view of the emergency device and the circuits controlled by the same embodying main features of my said invention. Fig. 2, is a vertical sectional view, enlarged, of a switch board with the emergency means shown in connection therewith and which is electrically controlled, but as shown, manually operated; and Fig. 3, is a view partly in elevation and partly in section, of the spring controlled plunger of an auxiliary make and break switch device of the said emergency means.

It should be borne in mind that each circuit will be provided with such types of fuses as will insure safety against abnormal electrical conditions or disturbances arising, due to various causes.

While I do not confine myself to any particular place or use to which my system may be applied, I will for convenience describe it as being installed in an auditorium or theater. In a house of this character it is necessary to control one or more circuits regardless of the other circuits, and at the same time provide a safety means which can be operated either manually or automatically.

From a source of supply α , is run a three wire feed circuit 9, 9, 9, to one or more places where current is required. From the feed line 9, 9, 9, is connected a circuit 12, 12, 12, which connects direct with the house lights α^1 , and which may be made or broken

manually by the three blade knife switch d . In a circuit 10, 10, are indicated stage lights c^1 , which are controlled manually by the two blade knife switch c .

A spring controlled emergency switch E, is mounted on a switch-board a , at a place convenient to an operator or other person having charge of the lights, and can be manually operated by such person. This switch E, can also be operated electrically by any person in the house, by means to be hereinafter described.

An auxiliary blade switch e , is provided on the rear of the switch-board and is operated through a plunger e^3 , by the emergency switch E. This switch e , controls a circuit 5, 5, which operates locks of spring doors, not shown.

It is to be assumed that a show is in progress on the stage. The stage lights c^1 , being lighted and the house lights α^1 , out. For some reason, such as a fire, it is necessary to deaden the stage light circuit 10, 10, and to light up the house lights α^1 , and to open the doors controlled by the circuit 5, 5, so as to quickly empty the house. The operator takes hold of the handle e^3 , of the emergency switch E, and places the switch in the position, as shown in Fig. 1. By thus disengaging the upper blades e^1 , of the switch E, from their clips e^4 , the stage lights c^1 , are extinguished and the current passing through the lower blades e^2 , of the emergency switch E, into the clips e^5 , and then through the circuit 3, 3, 3, and circuit 12, 12, 12, to the house lights α^1 , to illumine the same. At the same time that the lower blades e^2 , of the emergency switch E, engage their clips e^5 , they also engage the clips e^6 , to cause the current to pass through the auxiliary switch e , and the circuit 5, 5, which will by means of magnets, not shown, release the spring controlled doors included in the circuit 5, 5, to open the same and thus allow persons to pass out from the house. The circuit 5, 5, may be called a make and break circuit, for the reason that the current is only passed through it long enough to unlock the doors, when this circuit is again broken. The breaking or deadening of the circuit 5, 5, is accomplished by means of the plunger e^3 , which slides through a casing e^{10} , mounted in the switch-board a , and pivoted at e^{12} , to the blades e^{13} , of the auxiliary switch e .

These blades are pivoted at e^{15} , to suitable clips and engage at the upper end thereof, the clips e^{16} . The plunger e^9 , carries at its forward end a spring clip e^8 , which is adapted to receive a bar e^7 , carried by the lower blades e^2 , of the emergency switch E. By the engagement of the bar e^7 , the plunger e^9 , is pushed rearward and disengages the blades e^{13} , from their clips e^{16} , thus breaking the circuit 5, 5, which has just been provided by the blades e^2 , engaging the clips e^5 , of said switch E.

Should a fire or other disturbance occur at some part of the house remote from the switch-board, the emergency switch E, may be operated electrically from a switch at or near the said place. For instance, it is assumed, that a fire has occurred in a box of the theater. In such instance a person in the box will throw in the switch h , located in the box, and suitably labeled. This switch h , will cause two circuits 6, 6, and 8, 8, to be established. The circuit 6, 6, connects with a well known plunger type of solenoid g , and this circuit is completed by attachment to the clips e^4 , of the emergency switch E. This circuit 6, 6, is a make and break circuit similar to the circuit 5, 5, that is to say, as soon as the upper blades e^2 , of the switch E, disengage the clips e^4 , the circuit is broken.

A plunger g^1 , extends down from the solenoid g , which is mounted in rear of the switch-board a , and is adapted to be thrust downward when the solenoid is energized. This plunger, as shown in Fig. 2, being in its uppermost position. A lever g^2 , passes through the switch-board and is pivoted to the same. The front end of the lever g^2 , has a hook g^3 , which engages the switch E, near its handle and holds it in contact with the clips e^4 , against the tension of the coiled spring g^5 . A coiled spring g^4 , holds the rear end of the lever g^2 , up and maintains the

hook g^3 , in engagement with the said emergency switch.

When the plunger g^1 , of the solenoid g , descends it strikes the rear end of the lever g^2 , and causes the hook g^3 , to release the emergency switch E. The coiled spring g^5 , will then force the blades e^2 , from their clips e^4 , and cause the blades e^2 , to engage the clips e^5 and e^6 , causing the same result to be derived as hereinabove described, when the emergency switch E, is operated manually.

The circuit 8, 8, is employed to inform the operator at the switch-board, when there is trouble and to locate the same. A lamp a^2 is placed on the switch-board which is included in the circuit 8, 8, in order to attract the operator's attention to any trouble existing.

A series of annunciators, only one of which is shown, is also located on said switch-board and in the said circuit 8, 8, to reveal to the operator just what switch h , has been operated.

Having thus described the nature and object of my invention, what I claim as new and desire to secure by Letters Patent is:—

In combination, a main-switch and an auxiliary-switch having a movable contact-member and a plunger provided with a recess, said main-switch having a contact-arm adapted to engage contacts in circuit with said auxiliary-switch and to engage the recess of said plunger, substantially as and for the purposes set forth.

In witness whereof, I have hereunto set my signature in the presence of two subscribing witnesses hereto.

JOHN H. CROSIER.

Witnesses:

THOMAS M. SMITH,
J. WALTER DOUGLAS.