

(No Model.)

M. ROBINSON.

ELECTRIC CIRCUIT TESTING AND SWITCHING DEVICE.

No. 507,691.

Patented Oct. 31, 1893.

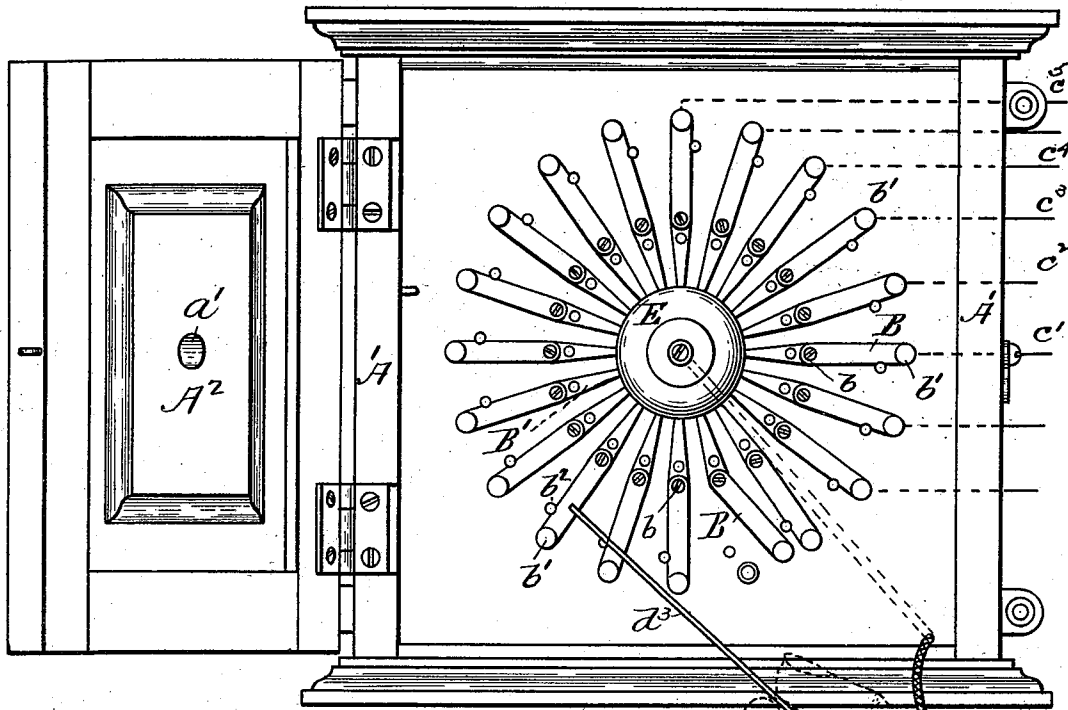
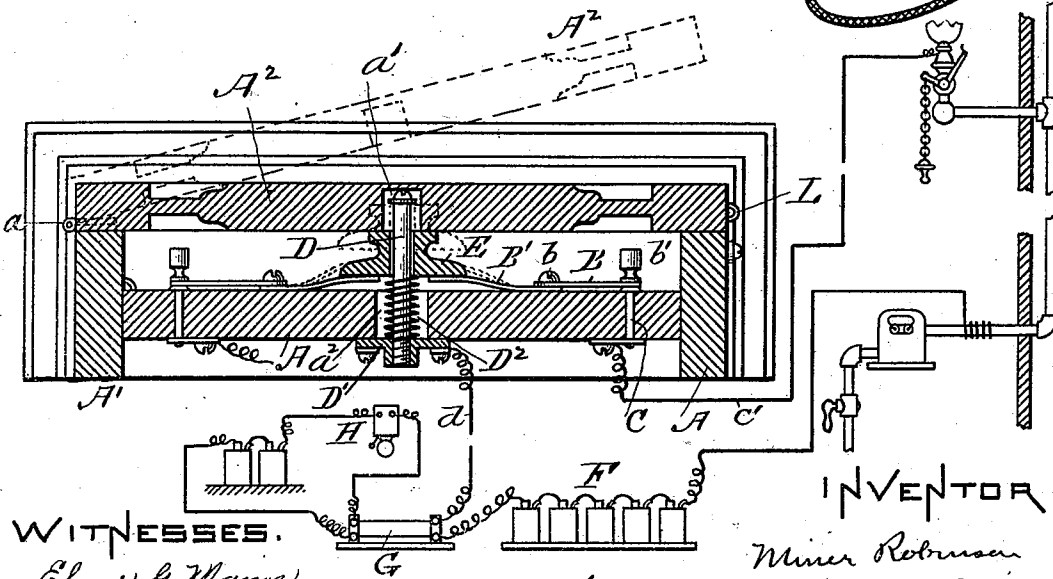


FIG. 1.



WITNESSES.

Elmer G. Mann
G. Gunther.

FIG. 2

INVENTOR

Miner Robinson
by Albert E. Leach
his Attorney.

UNITED STATES PATENT OFFICE.

MINER ROBINSON, OF NEWTON, MASSACHUSETTS.

ELECTRIC-CIRCUIT TESTING AND SWITCHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 507,691, dated October 31, 1893.

Application filed March 6, 1893. Serial No. 464,704. (No model.)

To all whom it may concern:

Be it known that I, MINER ROBINSON, of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Electric-Circuit Testing and Switching Devices, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention consists of certain improved features of construction in a circuit testing device of the class described in United States Letters Patent No. 400,951, granted to me April 8, 1889. In the said Letters Patent as in the present case, are shown and described a series of contact switches radially arranged around a central post, said switches serving as the terminals of a series of wires passing to electric gas lighting burners in various parts of the building, a switch being connected with each individual burner or group of burners. The central post is connected with and forms the terminal of the grounded or other wire or wires which complete the various circuits with said burners through the battery. These radial contact switches are so arranged that they may at once be put in contact with the central post, or with a connection thereof, which is the normal condition of things, or may all be disconnected from the battery and from each other, and one by one or any number of them be put in contact as desired. A sparking coil forms a part of the circuits, so arranged that when through any accident or otherwise a circuit is kept closed at any burner, as from the catching of the electrodes in the act of lighting, or by a short circuit of any kind, a bell is caused to ring by said coil which notifies the household that the battery is being consumed. Then instead of being obliged to inspect each burner and its circuit separately throughout the building, one has simply to disconnect all the contact switches from the central post, which may be done simultaneously, and then pass over the switches successively a flexible electrode connecting with the central post wire or wires, thus one by one connecting said wire or wires with the circuit through each burner. When the switch connected with the defective circuit is reached, the tell-tale bell will ring, or a spark will be formed showing at once where

the fault lies. This particular switch is then opened and the others placed in connection with the central post and with the exception of the one defective circuit, the system is in perfect working order. The inner sections of the radial switches terminate a short distance from the central post, and a knob or collar in contact with and movable over said post, is of a size sufficient to cover the inner ends of the switches. A spring around the central post keeps the knob or collar out of contact with the switches excepting when pressed down upon them.

In my said Letters Patent No. 400,951 the switches are arranged in an exposed position on the surface of a board, and the movable knob or collar on the central post is provided with a locking device engaging with a connection of the base board and arranged in such a manner that in order to maintain the switches in contact with the knob, the latter must be clamped down upon them by a turn of the hand, and by a reverse motion of the hand the switches are disconnected.

In my present device the switches are inclosed in a protecting box or case having a cover so arranged that when the cover is closed all the switches are held in contact with the central post or a connection thereof, but when the cover is opened the switches are automatically thrown out of connection with said post without any further operation.

Referring to the accompanying drawings illustrating my device Figure 1 is a front elevation thereof with the cover open, and Fig. 2 is a transverse section through the device with the cover closed.

"A" is the base board of the box or case and A' A' the side walls thereof.

A² is the cover hinged at "a" to the side. This cover is adapted to be locked when in a closed position by any desired form of fastening hook or latch L.

The base board is centrally bored out at a² and has on the under surface thereof the metal plate D' into which is screwed the inner end of the central post D.

B B' are the contact switches radially arranged around the central post, the inner strips or sections B' being rigidly secured to the base plate, while the outer sections B are jointed at "b" to the parts B'. The outer

sections B when in line with the inner strips B' rest upon the contact pieces C passing through the base board (see Fig. 2) each piece C being connected by a wire as c' , c^2 , &c., with a circuit through a gas burner. By means of a knob b' on each strip B the said strip may be thrown off its contact piece C or put in contact therewith as desired, each switch when in its normal condition forming the terminal of a circuit to, and through a burner.

E is a movable collar which slides over the post D and is in electrical contact therewith.

D^2 is a spiral spring surrounding the post D and resting within the opening a^2 , said spring tending to push the collar E upward when unopposed into the position shown by dotted lines in Fig. 2, out of contact with the parts B' of the radial switches.

When the cover A^2 is closed, it pushes the collar E downward against the pressure of the spring D^2 and into contact with the switches, the inner ends of the parts B' being preferably sprung upward from the surface of the base board in order to insure perfect contact.

When the system is in working order the cover A^2 is locked down in this position, the top of the post D resting within an opening a' bored out in the cover to receive it.

d is the grounded wire connected with the central post D and through the battery F with the various burner circuits.

G is a sparking coil interposed at any convenient point between the switch-board and the battery F, and controlling a local circuit with the call bell H therein so arranged that when any of the burner circuits are kept closed as by the sticking together of the electrodes at the burner in the act of lighting, the said coil will energize the bell circuit causing the bell to ring and thus notifying the inmates of the house of the running down of the battery. The door A^2 of the switch board case is then opened whereupon, by the action of the

spring D^2 the collar E automatically breaks contact with the switches B B' thus throwing open all the circuits and causing the bell to stop ringing. To locate the particular circuit wherein the fault lies, the operator takes the flexible electrode d^2 and d^3 connected with the central post D and passes said flexible electrode successively over the various strips B' thus closing one by one the various burner circuits. When the faulty one is reached the bell H will ring and the strip B of that particular switch is thrown off its contact piece C. The cover A^2 is then shut, by which operation the various circuits with the exception of the defective one are ready for use again.

I claim—

1. In combination, a series of gas lighting circuits normally open at the burners, a central post connected through a generator with said circuits, a series of hand-operated switches forming terminals of said circuits whereby said circuits may be separately connected with or disconnected from the generator and each other, and a case inclosing said post and switches and provided with a cover adapted when closed to complete electrical connection between said post and switches and when open to break said connection, substantially as described.

2. The combination of the switches B B', central post D, spring opposed collar E movable on said post, inclosing case A A' and hinged cover A^2 engaging with said collar substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 9th day of December, A. D. 1892.

MINER ROBINSON.

Witnesses:

CHARLES P. WORCESTER,
ALBERT E. LEACH.