

(No Model.)

J. SACHS.
AUXILIARY FIRE ALARM SYSTEM.

No. 481,590.

Patented Aug. 30, 1892.

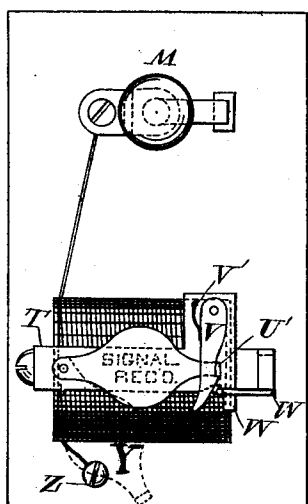
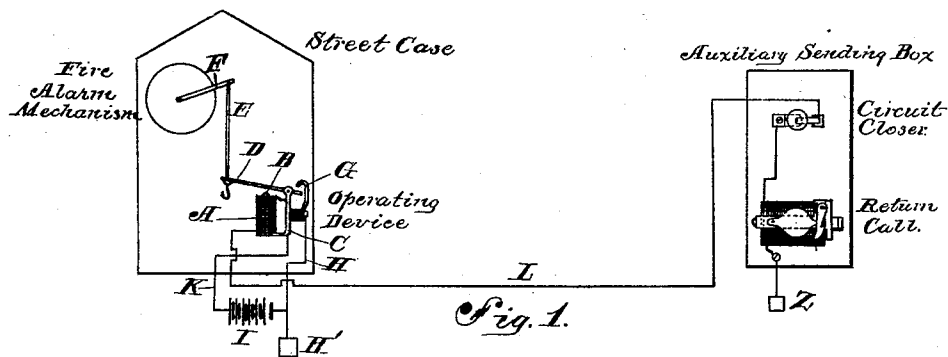


Fig. 2.

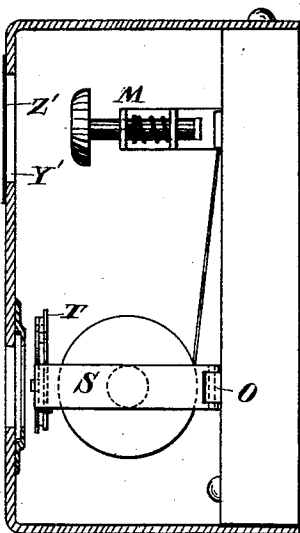


Fig. 3.

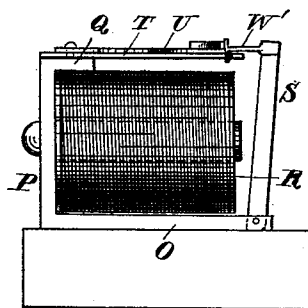


Fig. 4.

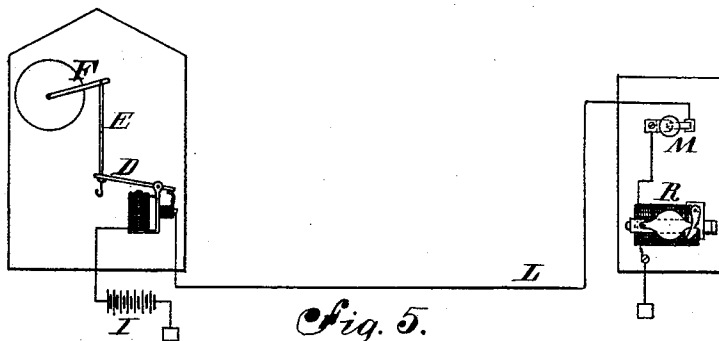


Fig. 5.

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AUXILIARY FIRE-ALARM SYSTEM.

SPECIFICATION forming part of Letters Patent No. 481,590, dated August 30, 1892.

Application filed March 29, 1892. Serial No. 426,960. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH SACHS, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Auxiliary Fire-Alarm Systems, of which the following is a specification.

The object of the present invention is to provide a system of electrical communications with fire-alarm boxes, whereby an alarm can be sent by an operator at an auxiliary sending-box located at any distance from the street fire-alarm mechanism, and a return-signal received at the sending-box to show whether the device which operates the alarm mechanism has performed its proper functions without opening the street-case in which the alarm mechanism is placed.

Heretofore auxiliary fire-alarm signals have been provided which form a part of or are electrically connected with the fire-alarm apparatus or mechanism located in the street-case; but in this invention the object is to supply a separate, simple, and inexpensive electrical device which can be placed within any fire-alarm street-case for operating it mechanically, and then to provide a single circuit, which may consist of one wire and the ground, having in said circuit an auxiliary sending-box at the opposite end of the line provided with a circuit-closer and a return-signal therein, which is operated only when the operating device in the street fire-alarm case has been properly actuated by this auxiliary sending-box, all of which will now be set forth in detail.

In the accompanying drawings, Figure 1 is a view of a complete circuit, showing the fire-alarm street-case containing the alarm mechanism and the operating device for releasing the same, and an auxiliary sending-box containing a circuit-closer and a return-signal, both the operating device and the auxiliary sending-box being connected by a single wire and ground return; Fig. 2, a front view of the auxiliary sending-box, showing circuit-closer and return-signal; Fig. 3, a side view of the same; Fig. 4, an end view of same, showing return-signal only; and Fig. 5, a view showing modified form of connecting up the different devices shown in Fig. 1.

In constructing my invention it should be borne in mind that the primary object is to place in the street fire-alarm case an electrical device which is operated by a circuit that is entirely independent of the circuit which operates the fire-alarm mechanism, and the only connection between this operating device and the fire-alarm mechanism is a mechanical connection, preferably in the form of a link, rod, or cord, so that when the armature of the operating device is actuated it will operate the fire-alarm mechanism in the street-case in the same manner as if it had been operated by hand directly at the street-case. This mechanism consists of a magnet A, which is mounted in this instance on one limb B of a U-shaped piece, the other limb C having hinged thereto an armature D, which armature is connected by means of a rod E with the trip-arm F of the alarm mechanism. To the limb C is attached by means of an insulated piece a contact-finger G, with which the armature D engages when the magnet is energized and the alarm mechanism is set in motion. This contact-finger G is connected by a conductor H with the ground at H', and also with one pole of the battery I. The limb C of the magnet is connected with the other pole of the battery I by wire K. One end of the magnet-winding A also connects with the limb C and the other end of the winding with the circuit-wire L, running to the circuit-closer in the auxiliary sending-box.

The auxiliary sending-box may be located at any distance from the street fire-alarm box, which contains the mechanism just described, and it contains a circuit-closer M, which may be made in any desired form best adapted to the purpose. I prefer using it in the form of an ordinary push-button, as shown. Below this circuit-closer is a base-piece O, which is provided with a right-angled or forwardly-projecting limb P, with a short return-bend Q. To this limb P is secured a magnet R. To the projecting end of the base O, I hinge an armature S, which projects out slightly beyond the magnet R. To the return-bend Q is attached an L-shaped plate T, which extends over the magnet and terminates at the end of the magnet in close proximity to the free end of the armature S. Centrally on the body of this plate T is an inscription "Signal Re-

ceived," or words of similar import, and directly in front of this is an aperture in the case through which this inscription may be seen. This plate has also hinged thereon a swinging plate U, adapted to cover up the inscription or words. The free end of this swinging piece U has a finger U', which when the hinged piece is in its normal position over the inscription is held in place by a latch V, hinged to the face of the plate T. The latch is held in place by a spring V', as shown. The end of the L-shaped plate T on its lower side has a projecting point or lug W, and the free end of the armature S has a finger W', which projects over the plate T and is then bent down behind the point W, so that the throw of the armature is regulated by this stop or lug. The finger W', it will be observed, engages with the latch V below the notch, so that when the hinged piece U is placed in position, as shown in Fig. 2, and the armature S is attracted by the magnet R and moves toward the end of the plate T, the finger W' engages the latch V, moving it over sufficiently to trip or release the lug U' from the notch of the latch, permitting the hinged piece to drop down and rest on the finger W', and when the armature again returns to its normal position the hinged piece drops down by force of gravity to the position shown by dotted lines Y, Fig. 2, thus exposing the inscription or return-signal referred to. It will be seen that one end of the magnet-winding R is connected with the circuit-closer and the other end of the winding with the ground at Z.

The auxiliary sending-box has in its front face an aperture Y', through which access is gained to the push-button or circuit-closer. Over this aperture I paste a slip of paper Z', on which is placed any suitable directions for operating the device. The object of this is to keep the circuit-closer normally sealed up, so that in order to operate it the paper seal Z' would have to be ruptured in order to actuate the push-button.

In operation we will suppose that one of these auxiliary sending-boxes is located in a residence remote from the street fire-alarm box with which it is connected by the wire L. When now the circuit-closer is pushed in, the current from the battery I is sent through wire K, limb C, magnet A, wire L, thence through circuit-closer M and magnet R to the ground at Z. The magnet A being thus energized, the armature D is drawn down, and thus actuates the trip-arm of the street-alarm mechanism, and, therefore, the armature D engages with the contact-finger G, thereby short-circuiting the battery I and again returning the armature to its normal position. As the sending of a current through the magnet R also attracts the armature S, the hinged piece U is at the first movement of the armature tripped or disengaged from the hook of the latch V and held on the finger W' of the armature S, and when the battery is cut out

the armature is released and returns to its normal position, thereby allowing the hinged piece U to drop.

I particularly call attention to one important feature in this system. It is obvious that a fire-alarm box equipped with an operating device of this character does not require to be opened in order to be positively assured that the signal is given or properly responded to by the alarm-box, because the auxiliary operating device or the circuit-closer therein and the return-call, which are always together in one case, are adapted to show the return-signal only when the alarm-box has done its work properly, or, rather, when the operating device has properly acted upon it. The device is therefore perfectly adapted as a return call or signal for hotel bells, or for any other purposes where return-signals are desirable. It should be understood, however, that the attachment of this operating mechanism in the alarm-box does not interfere with the operation of the alarm mechanism at the case, nor is the auxiliary mechanism operated or the return-call set in motion when the alarm mechanism is actuated by hand.

What I claim as new is—

1. A fire-alarm system consisting of a fire-alarm mechanism and a separate and independent electro-magnetic tripping device for said fire-alarm mechanism, a circuit-controlling device directly connected with said tripping device, and an auxiliary operating device at the other end of the circuit, consisting of a circuit-closer and a return-call.
2. A fire-alarm system consisting of the fire-alarm mechanism, a separate electro-magnetic tripping device for said fire-alarm mechanism, a circuit-controlling device connected with said tripping device, and an auxiliary operating device composed of a circuit-closer and return-call in the same circuit as the tripping device and circuit-controller in the fire-alarm box, but remote from said box, substantially as set forth.
3. A fire-alarm system consisting of fire-alarm mechanism, a separate electro-magnetic tripping device for said fire-alarm mechanism, a circuit-breaking device connected with said tripping device, a circuit-closing device remote from said box, a return-call adjacent to said circuit-closer, and a single electric circuit connecting said tripping device, said circuit-breaking device, said circuit-closer, and said return-call.
4. A fire-alarm system consisting of a fire-alarm mechanism, a separate electro-magnetic tripping device for said fire-alarm mechanism, a circuit-controlling device connected with said tripping device, and any number of circuit-closers and return-calls remote from said fire-alarm mechanism and in one and the same circuit with each other and with said tripping device and said circuit-controlling device.
5. A fire-alarm system consisting of a fire-

alarm mechanism, a separate electro-magnetic tripping device for said fire-alarm mechanism, a circuit-controller directly connected with said tripping device, a number of circuit-closers and return-calls remote from said fire-alarm mechanism and in the same circuit with each other, and a single generative battery in the circuit with said circuit-closers and return-calls.

6. A fire-alarm system consisting of a fire-alarm mechanism, an electro-magnetic tripping device for said alarm mechanism, a circuit-controlling device on said tripping device, a circuit-closer remote from said alarm mechanism, and a return-call adjacent to said circuit-closer and comprising a movable guard normally held by a latch and a magnet having an armature to engage with said latch, said magnet, circuit-closer, tripping device, and circuit-controlling device being in one

and the same electric circuit, whereby when the circuit-closer is operated the tripping device will be actuated and simultaneously the said magnet will be energized, thereby tripping the said latch, allowing the movable guard to fall upon the armature of the said magnet, and whereby the said circuit-controlling device will be operated simultaneously with the movement of the tripping device, thereby breaking the circuit, so as to allow the armature of the said magnet to retract, allowing the movable guard to drop to its limit of movement.

Signed at New York, in the county of New York and State of New York, this 22d day of March, A. D. 1892.

JOSEPH SACHS.

Witnesses:

J. S. ZERBE,

C. FRED. BUCHANAN.