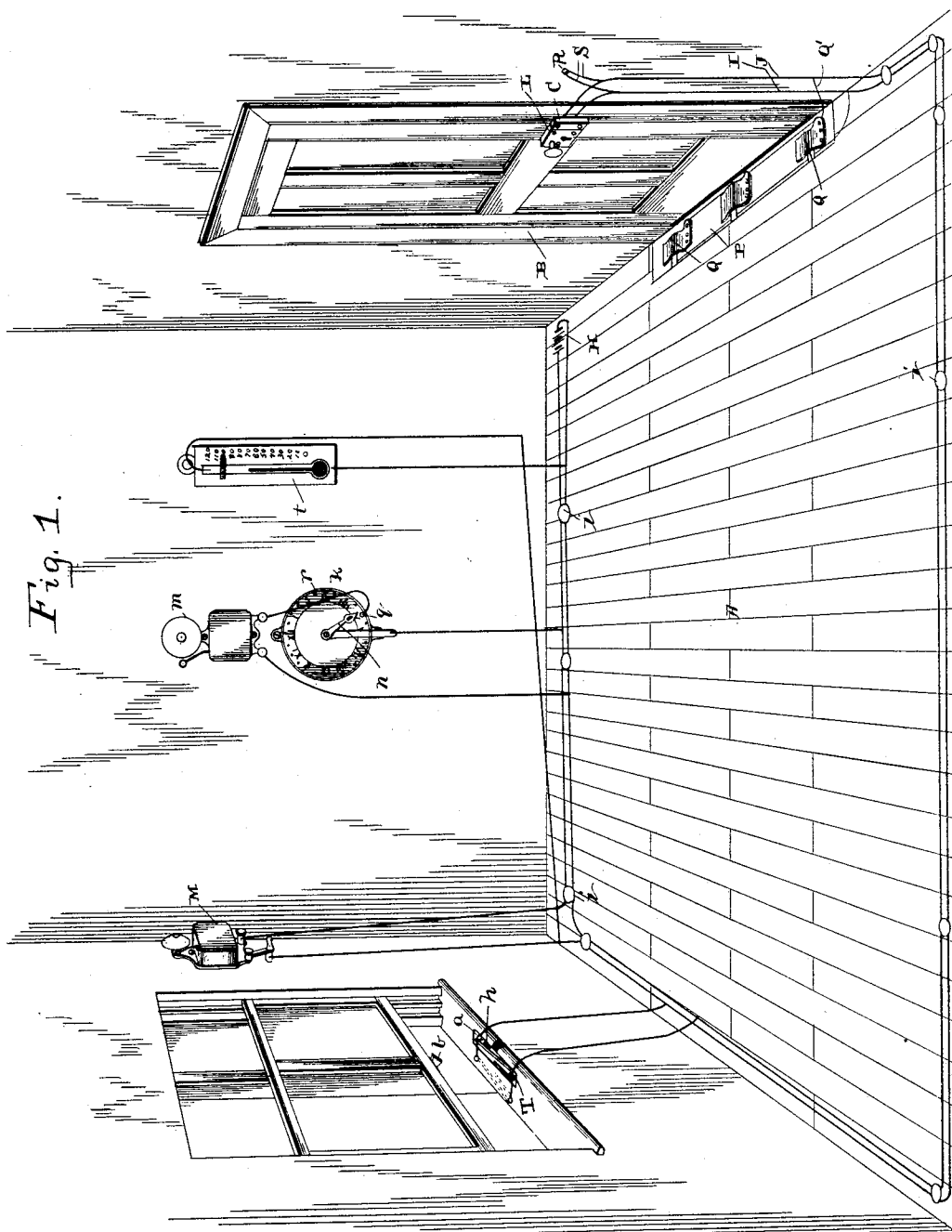


D. D. NOLLEY.
COMBINED ELECTRIC BURGLAR AND FIRE ALARM.
No. 484,233. Patented Oct. 11, 1892.



WITNESSES.

Geo. E. Frick.

Robt. A. Fitzgerald.

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Fig. 2.

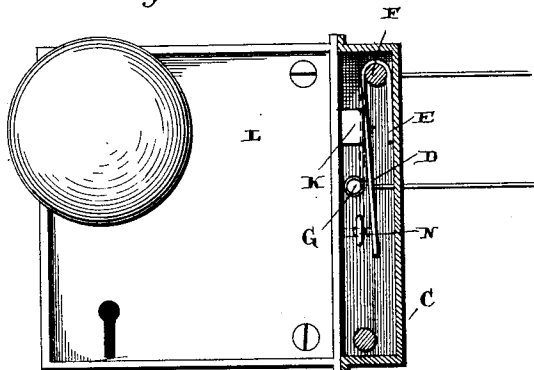


Fig. 3.

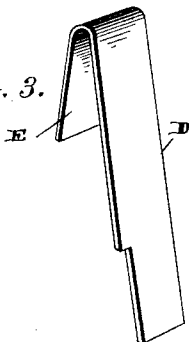
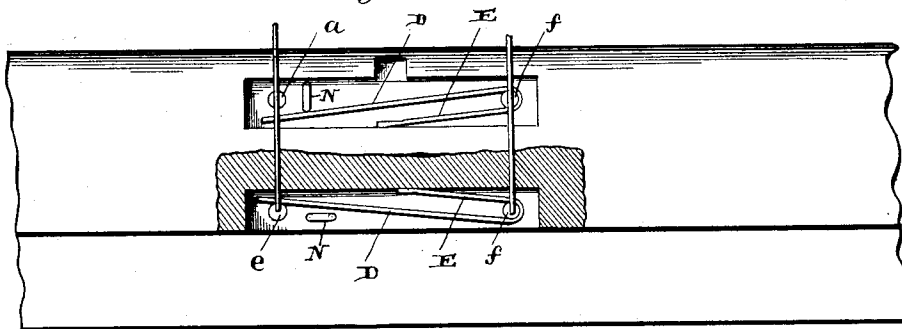


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID D. NOLLEY, OF WILSON, NORTH CAROLINA, ASSIGNOR TO E. K. WRIGHT,
FRANK ROUNTREE, AND J. D. FARRIOR, OF SAME PLACE.

COMBINED ELECTRIC BURGLAR AND FIRE ALARM.

SPECIFICATION forming part of Letters Patent No. 484,233, dated October 11, 1892.

Application filed May 25, 1892. Serial No. 434,319. (No model.)

To all whom it may concern:

Be it known that I, DAVID D. NOLLEY, of Wilson, in the county of Wilson and State of North Carolina, have invented certain new and useful Improvements in a Combined Electric Burglar and Fire Alarm; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in combined electric burglar and fire alarms; and it consists in the construction and arrangement of parts, which will be fully described hereinafter, and particularly pointed out in the claims.

The object of my invention is to provide an electric burglar-alarm of the construction hereinafter shown and specified whereby when the knob of the door is even slightly turned for the purpose of entering the room an alarm will be sounded, or a window slightly raised an alarm will be sounded, or a shutter opened an alarm will be sounded, and to so secure the wires through which the circuit is made that when the insulation thereof becomes burned an alarm will also be sounded.

In the accompanying drawings, Figure 1 is a perspective view of a fire and burglar alarm which embodies my invention, showing in the same circuit a time-alarm, a thermometer for sounding an alarm, and a push-button. Fig. 2 is an enlarged view of the lock-keeper of the door, being in section to show the spring circuit closer and breaker inside. Fig. 3 is a detached view of the spring circuit closer and breaker. Fig. 4 is an enlarged view of the window-sill, showing the circuit closers and breakers.

A indicates the interior of a room or house, and B the door thereof which it is desired to protect against entrance without first sounding an alarm and before the door can be opened even the slightest, as the alarm is sounded as soon as the knob is so slightly turned that the latch has not passed out of the keeper to allow the door to be opened. This is accomplished by the following simple mech-

anism: Placed within the keeper C of the lock or latch is a spring circuit closer and breaker D, which consists of a piece of brass, being doubled upon itself at its upper or lower end to form a spring E. This closer and breaker is placed within the keeper and held in place by simply hanging the doubled end over one of the ordinary keeper-screws F, the spring portion E resting against the outer edge of the keeper, thus holding the opposite free end of the circuit closer and breaker normally outward and in contact with a pin or projection G, that is secured into the door-frame before the keeper is screwed to place. The battery H has one of its poles connected with the screw F, over which the double portion of the circuit-closer hangs by means of a wire I, and the other pole of the battery is connected with the pin or screw G by means of a wire J. The lower or free end of the circuit closer and breaker D is in the path traveled by the reciprocating latch K of the door-lock L, so that when the door is closed the said latch is thrown inward, and as the strength of the spring circuit-closer is less than the strength of the spring which actuates the latch the latch forces the lower end of the circuit closer and breaker inward and out of contact with the screw G, which forms a contact-point for one pole of the battery, and thus breaks the circuit, which is otherwise closed by the said circuit-closer. Now, in this position the circuit is broken, as will be understood. When, however, the knob is turned for the purpose of opening the door, the latch is thrown inward and the lower end of the circuit-closer is instantly thrown outward by its own spring and in contact with the contact point or pin G, thus closing the circuit of the battery. Within the circuit of this battery and said circuit-closer is an electric alarm or bell M, of any desired ordinary construction, so that when the battery-circuit is closed an electric current is formed through the said bell and an alarm sounded until the door is again closed or until the latch is allowed to project into the keeper and by forcing the lower end of the circuit-closer inward break the circuit. When it is desired to normally break the

circuit—as, for instance, in the day time—and it is not required to sound an alarm, the lower end of the circuit-closer is forced inward and held so by means of a cut-out N, which is placed within the keeper and secured to the door-frame and which when turned has its head to engage the lower edge of the closer and force it inward out of contact with the pin G, thus breaking the circuit and preventing it from being sounded when the knob of the door is turned to withdraw the latch. By means of this construction it will be seen that my invention is very simple and that the whole device can be applied to an ordinary “knob-rim lock” without in any manner changing the construction thereof or without securing any part of my circuit closer and breaker to the keeper thereof, as has heretofore been the case.

So far I have described my invention as being applicable to knob-rim locks; but it is also equally adapted to be used in connection with the “mortise-lock” and with the same facility. For instance, in a mortise-lock a pin or screw is passed through the mortise from the outside and the circuit-closer just described suspended therefrom and one pole of the battery connected with the said pin or screw. Below this another screw or pin is passed, which corresponds to the pin G, and the other pole of the battery connected with this. Then the cut-out N is secured to one side of the said mortise and operates to cut the alarm out, as when applied to a knob-rim lock, as will be readily seen. If desired, a matting P may be placed just inside of the door and this matting provided with spring-contacts Q, which are within the same circuit by means of the wires Q', so that when the matting is stepped upon an alarm will be sounded; also, an ordinary electric push-button R can be placed outside of the door, and the device thus made to serve the purpose of a door-bell by connecting the said push-button with the circuit by means of wires S. Should it be desired, the said alarm can be applied to windows and shutters, as indicated in the drawings, and in which event the construction of the circuit closer and breaker will be the same as before described. In this event a mortise is cut in the window-sill in the path traveled by the window-sash, so that when the window is closed the lower end thereof will rest over the said mortise. In this instance the circuit closer and breaker will be secured therein in the same manner as described in the mortise-lock—that is, by means of a pin or screw T, which will pass through the said mortise—and the opposite end of the closer be in contact with another pin or screw *a*, which corresponds to the pin G used at the door-lock. Upon the under side of the window-sash will be a projection *b*, which engages the free end of the circuit-closer when lowered, so that it is forced out of contact with the pin *a*, and thus breaks the circuit when the window-sash is lowered. When, however, the window-sash

is raised, the free end of the closer will come in contact with the pin or screw *a*, close the circuit, and thus sound an alarm.

When it is desired to apply this device to window-shutters, a mortise is made in the outer edge of the window-sill and in line with the path traveled by the lower edge of the said shutters, so that the closer D, placed therein, will be operated by the shutters in the same manner as it is operated by the window-sash. When the shutters are closed, the circuit will be broken, but when they are opened the circuit is closed by the free end of the closer coming in contact with a pin *e*, corresponding with the pins G and *a* already described, and the closer is held in place by means of a screw or pin *f*.

When it is desired to use the device for the shutters and it is applied to both the window and shutter and it is desired to raise the window, as in summer-time, the closer must be forced out of contact with the pin *a* to break the circuit, and this is done by a switch or cut-out *h*, which when swung around will engage and force the said closer down, thus breaking the circuit. When it is desired to have the window closed, the cut-out *h* is not used, for when the window is down the projection on the bottom thereof breaks the circuit in the manner before set forth. The wires which are connected with the battery and the said closers are held to place by means of large-headed tacks or screws *i*, which are driven between the two wires, as shown, and overlap them both. The object of this is that should a fire occur the insulation of the wires will burn off and a circuit be formed through the battery and bell and an alarm sounded, as will be understood.

For the purpose of convenience and for making a complete system adapted for the several uses of a household I provide a time-alarm *k*, of any ordinary form, which is placed in the circuit and in any other room of the house desired, so that when the alarm is set to ring at a specific time a circuit will be formed through the bell M and an alarm thus sounded.

While an alarm of the ordinary construction may be used, I prefer to use an alarm consisting of a clock, as here illustrated, having only an hour-hand *n*, with an outturned end, and to place upon the hand-arbor outside of the said hour-hand a plate *p*, which will extend through the frame of the clock and have one pole of the circuit connected therewith. The other pole of the circuit is connected with a pin *q*, which is placed in one of the several holes *r* made in the face of the clock, according to the time it is desired to have an alarm sounded. When the hour-hand has reached the said pin, the circuit will be completed through the said hand. The arbor and the plate *p*, as will be understood, and the bell will then sound an alarm. So, also, to further complete the system for household uses I connect in the same circuit

a thermometer *t*, which has the mercury at the bottom thereof connected with one pole of the battery and a contact formed through the mercury at its upper end with the other pole of the battery when the mercury has reached a prescribed point, thus sounding an alarm when the temperature of the room has reached any desired degree. Thermometers constructed to accomplish this end are old, and therefore I need not give any description thereof in detail.

While I have shown and described my invention as applied to only one door and window, it will be understood that all of the windows and doors of a house can be arranged with the same circuit closers and breakers that have been described and an alarm sounded when any one of them is opened. So, also, while I have shown and described the alarm as being in the same house to which the closers are connected, it will be understood that the alarm may be placed at a distance—as, for instance, in the residence of a person when it is desired to protect his store at a distance therefrom—and the wires run from the store either above or under the ground.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In an electric burglar-alarm, the combination of a door or window frame having a keeper or recess, a screw or pin extending transverse thereof, an electric circuit closer and breaker consisting of a metal spring having one end doubled upon itself and hung over the said pin, and a contact-point at the free end of the said closer and against which it strikes to form an electrical contact, and the door or window having a means to engage and depress the free end of the said closer, and electrical connection between an electric source and the said contact and pin, substantially as set forth.

2. An electric burglar-alarm consisting of an outside keeper secured to the frame of a door, the screws which secure it in place, a spring-closer having one end bent upon itself and hung over one of the said screws, a pin

or projection extending outward from the door-frame and engaging the free end of the said closer, the door, the endwise-moving latch which engages the said closer at its free end for forcing it inward, and electrical connection between a source of electrical supply and the said pin and screw, substantially as described.

3. In an electric burglar-alarm, the combination of a door-keeper having a transverse pin or screw, a spring circuit-closer supported thereon, a pin against which the free end of the spring-closer strikes, a means upon the door for forcing the closer inward when the door is closed, electrical connection between a battery and the said pin and screw, and a cut-out within the said keeper for forcing the said closer inward at its free end, and thus prevent it from being operated by the door, substantially as specified.

4. A burglar-alarm for a window, consisting of a spring-contact at the outer edge of the window-sill to be engaged by the shutters, a spring at the inner edge of the sill to be engaged by the window-sash when lowered, a contact at the free end of each spring and with which it normally engages, electrical connection with one end of the said springs and with the contacts at the other ends thereof, and a device between the springs for forcing one down and out of contact with its contact-point, substantially as and for the purpose set forth.

5. A fire-alarm consisting of a battery, two wires side by side connected with opposite poles of the battery, the said wires provided with a fusible insulation, and headed screws or tacks placed between the said wires for holding them in place, whereby when the insulation is burned the circuit is closed by the heads of the tacks or screws, substantially as described.

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

DAVID D. NOLLEY.

Witnesses:

J. C. HALES,

J. J. ATKINSON.