H. S. BITTING.

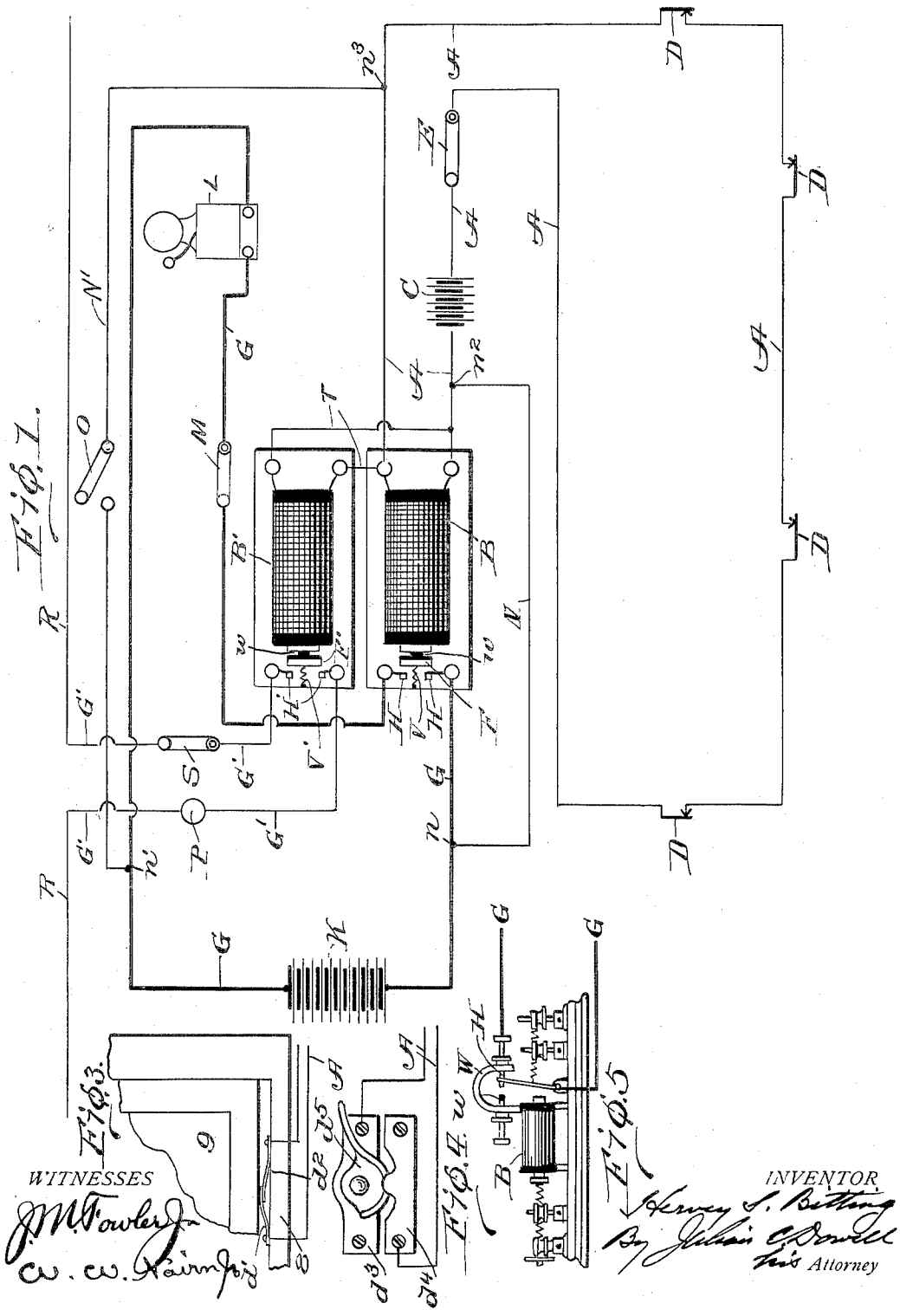
ELECTRIC BURGLAR ALARM.

APPLICATION FILED DEC. 30, 1912.

1,081,278.

Patented Dec. 9, 1913.

2 SHEETS—SHEET 1.



WITNESSES

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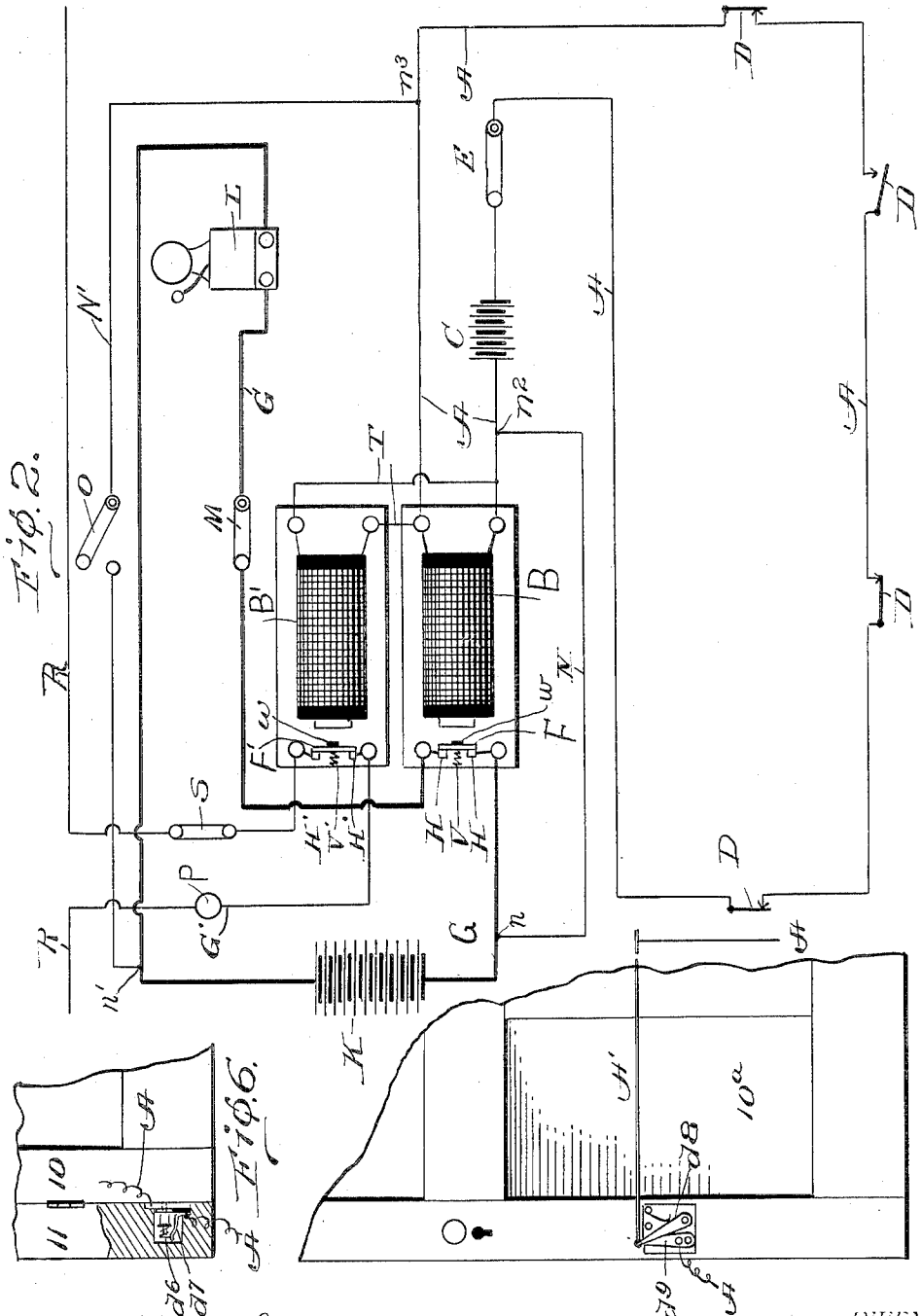
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WITNESSES

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UNITED STATES PATENT OFFICE.

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ELECTRIC BURGLAR-ALARM.

1,081,278. Specification of Letters Patent. Patented Dec. 9, 1913.

Application filed December 30, 1912. Serial No. 739,280.

To all whom it may concern:

Be it known that I, HERVEY S. BITTING, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Electric Burglar-Alarms; 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 appertains to make and use the same.

This invention relates to certain improvements in the construction of apparatus employed in electric burglar alarms and in the arrangement of circuits for the same.

The principal object is to give a continuous alarm when a circuit including the protected property is tampered with in any way, the replacing of said circuit in its original condition at the point where the alarm originated being ineffective for stopping the alarm, which can only be done by an improved resetting appliance operated by the occupant of the property or other authorized person.

Other objects will become apparent from the following description.

The invention will first be described in connection with the accompanying drawings, which constitute a part of this specification, and then set forth with more particularity in the claims at the end of the description.

In the drawings, in which the same reference characters are used to designate similar parts throughout all of the views: Figure 1 is a diagrammatic view of a burglar alarm system embodying this invention, showing the property circuit closed and the alarm circuits open; Fig. 2 is a similar view showing the property circuit open and the alarm circuits closed; Fig. 3 is a detailed view of one of the property circuit breakers applied to the frame of a window; Fig. 4 is a detailed view of a sash lock included in the property circuit; Fig. 5 is a side elevation of a relay such as is employed in the present system; Fig. 6 is a detailed view of a property circuit breaker applied to a door-frame, and Fig. 7 is another detailed view showing how the panels of a door may be protected by an electric conductor included in the property circuit and attached to an improved form of circuit breaker.

As illustrated in Figs. 1 and 2, the property circuit includes the wires A, relay magnet B, local battery or generator C, and any desired number of circuit breakers D. This circuit may also include a cut out switch E. The armature lever F, of the relay magnet B, is included in an alarm bell circuit which also comprises the wires G (shown in heavy lines for clearness), contact points H, strong battery or generator K, and bell L. The bell circuit may also have a cut out switch M. The resetting circuit includes wires N and N^1 connected to the wires G of the bell circuit at opposite sides of the strong battery K, as at n and n^1, and to the wires A near opposite terminals of the relay magnet, as at n^2 and n^1. One of the wires N, N^1 should include a push button or switch O which, when closed, will have the effect of cutting said strong batteries of the bell circuit into the property circuit for the purpose of resetting the system, as hereinafter explained. A second relay magnet B^1 and corresponding armature lever F^1 may be employed for operating a red lamp alarm circuit which includes, in addition to said armature lever F^1 and the red lamp P, the wires G^1 connecting with the city lighting mains R, the contact points H^1, and the cut out switch S. The terminals of the magnet B^1 are connected with those of the magnet B by bridging wires T. The lamp circuit will, therefore, be operated simultaneously with the bell circuit.

The battery C in the property circuit is comparatively weak, being just strong enough to give the magnets B and B^1 sufficient magnetism for holding the armature levers F and F^1 out of contact with the contact points H and H^1, against the tension of the usual springs V and V^1 attached to said levers. Said battery C is not strong enough to draw said armature levers away from the contact points H and H^1 when said levers have once been released from their magnets by breaking the property circuit. Consequently, when the property circuit is once broken or opened by tampering with any of the circuit breakers therein or cutting any of its conducting wires, the alarm bell will continue to ring and the red lamp continue to burn by reason of their circuits being closed by the armature levers swinging into contact with the contact points H and H^1 under the influence of the springs V and V^1, and the closing of said property circuit

at the point where the alarm originated will not stop the bell ringing or the lamp burning.

In order to stop the alarms and reset the system, it is only necessary to close the switch O, whereupon the strong battery K in the bell circuit will be cut into the property circuit, thus furnishing the requisite current to the magnets B and B^1 to enable them to attract the armature levers F and F^1 away from the contact points H and H^1; thereby breaking the bell and lamp circuits and closing the property circuit. The switch O is then opened again, leaving the battery C to alone retain said levers, so that when said property circuit is again broken and an attempt made to close it at the same point, the current in this circuit will not be strong enough to move the levers for breaking the alarm circuits. It will also be observed that by operating said switch, the occupant of the building may easily tell whether everything is properly closed because, if a sash lock is left unfastened, or any of the other circuit breakers are left open, the closing of the switch will not stop the bell from ringing or put out the light. As shown in Fig. 5, the armature levers are insulated from the arches W of the relays, as at *w*, when said levers are attracted to the magnets, while the contact points H and H^1 close the bell and lamp circuits when said levers are drawn away from said magnets by the springs V and V^1 upon the magnets being demagnetized by a break in the property circuit. It will thus be seen that for the purposes of this invention, the insulating point and contact point have just been reversed in each relay from the positions they occupy in an ordinary relay.

In Fig. 3, d^1 and d^2 indicate resilient contact pieces secured to a window-frame 8 and normally held together by the sash 9. When the sash is raised, however, the contact piece d^1 will separate from the contact piece d^2 and open or break the property circuit including the wires A which are attached to said contact pieces. The two parts d^3 and d^4 of a sash lock, Fig. 4, may also be included in the property circuit, being connected to the wires A, as shown. As soon as the swivel member d^5 on the part d^3 is turned to release it from the part d^4, the circuit will be broken and the alarms given. Similarly in Fig. 6, when the door 10 is opened, the spring-pressed part d^6, of the circuit breaker arranged in the door-frame 11, will be released from the other part d^7 in the well known manner, thus breaking the property circuit including the wires A which are attached to said parts d^6 and d^7.

In Fig. 7, one of the wires A is shown electrically connected to a wire A^1 stretched across the panel 10^a of the door. One end of said wire A^1 is secured to a spring-pressed contact piece d^8 which is normally in contact with a fixed contact piece d^9, the latter being attached to another wire A of the property circuit. It will be understood that all the panels of the door may be protected in this way and that any desired number of wires A^1 may be stretched across each panel at suitable distances apart and arranged horizontally, vertically, or obliquely, so as to prevent a burglar from boring through or removing the panel without disturbing or severing at least one of said wires. Even a slight tension on the wire A^1 will move the contact piece d^8 away from the contact piece d^9, thereby breaking the property circuit and giving an alarm, while the cutting of said wire will have the same effect. The arrangement shown in Fig. 7 may also be employed to advantage on the boards or palings of chicken coops or fences, so that the removal of one of said boards or palings will give an alarm placed in the house or other convenient location. When the alarm system is installed in a store or other building, which is not occupied at night, the alarm bell and red lamp may be mounted on the front of the building, as on a goose neck overhanging the street. The ringing of the bell will attract the attention of a patrolman several blocks away and the light of the lamp will indicate the exact location of the property attacked.

It will be understood that this invention is not restricted to the details of construction herein shown and described but is only limited to the essential structural features specified in the claims. For instance, while the battery or generator in the bell circuit is shown and described as strong and that in the property circuit as weak, these are merely comparative terms used to emphasize the important fact that the generator in the property circuit is too weak to close said circuit, while the generator in the alarm circuit is strong enough to help out said weak generator for the purpose of closing or resetting the property circuit, when desired.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. The combination with an electric magnet and an armature lever therefor, of a normally closed property circuit including said magnet and a generator, a normally open alarm circuit including said armature lever and a second generator, and means for automatically moving the armature lever away from the magnet to close the alarm circuit when the property circuit is opened, the generator of the property circuit being incapable of exciting said magnet sufficiently to overcome said means.

2. The combination with an electric mag-

net and an armature lever therefor, of a normally closed property circuit including said magnet and a generator, a normally open alarm circuit including said armature lever and a second generator, means for automatically moving the armature lever away from the magnet to close the alarm circuit when the property circuit is opened, the generator of the property circuit being incapable of exciting said magnet sufficiently to overcome said means, and means for cutting the generator of the alarm circuit into the property circuit for energizing said magnet sufficiently to overcome said means.

3. The combination with an electric magnet and an armature lever therefor, of a normally closed property circuit including said magnet and a generator, a normally open alarm circuit including said armature lever and a second generator, means for automatically moving the armature lever away from the magnet to close the alarm circuit when the property circuit is opened, the generator of the property circuit being incapable of exciting said magnet sufficiently to overcome said means, electric conductors connected to the alarm circuit at opposite sides of the generator therein and to the property circuit adjacent the terminals of the magnet, and a circuit closer in said conductor, whereby said generator in the alarm circuit may be cut into the property circuit for energizing said magnet sufficiently to overcome said means.

4. The combination with an electric magnet and an armature lever therefor, of a normally closed property circuit including said magnet and a generator, a normally open alarm circuit including said armature lever and a second generator, a second magnet and armature lever therefor, said magnets being electrically connected to one another, a second alarm circuit including the second armature lever, and means to automatically move the armature levers away from their respective magnets for closing said alarm circuits when the property circuit is opened, the generator of the property circuit being incapable of exciting either of said magnets sufficiently to overcome said means, and means for cutting the generator in the alarm circuit into the property circuit for energizing said magnets sufficiently to overcome said means.

5. The combination with an electric magnet and an armature lever therefor, of a normally closed property circuit including said magnet and a generator, a normally open alarm circuit including said armature lever, a bell, and a second generator, a second magnet and armature lever therefor, said magnets being electrically connected to one another, a second alarm circuit including the second armature lever and a lamp, means to automatically move the armature levers away from their respective magnets for closing said alarm circuits when the property circuit is opened, the generator of the property circuit being incapable of exciting either of said magnets sufficiently to overcome said means, and means for cutting the generator in the alarm circuit into the property circuit for energizing the magnets sufficiently to overcome said means.

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

HERVEY S. BITTING.

Witnesses:

JOSEPH SMITHGALL,

H. S. SHENCK.