C. RIESER.

BURGLAR ALARM.

APPLICATION FILED SEPT. 3, 1915.

1,226,009.

Patented May 15, 1917.

2 SHEETS—SHEET 1.

FIG. 1.

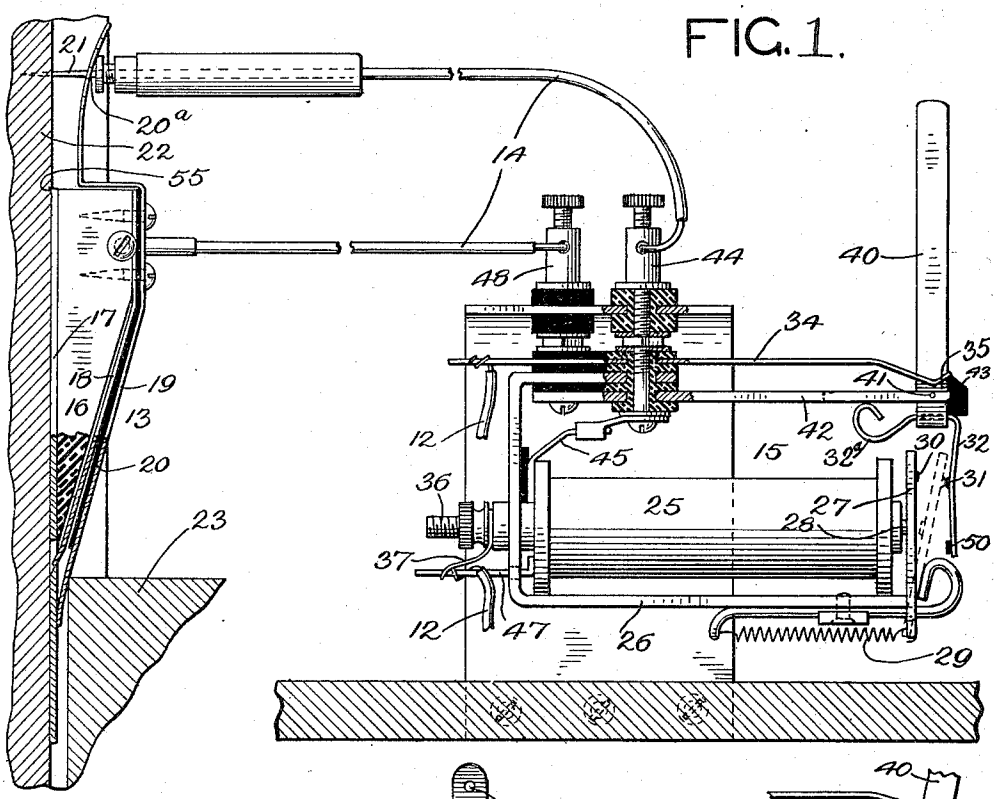


FIG. 2.

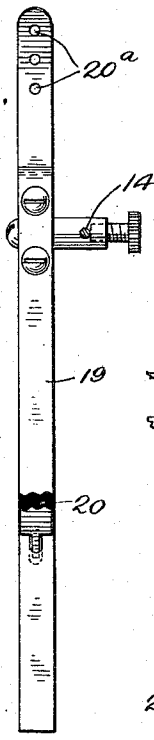


FIG. 3.

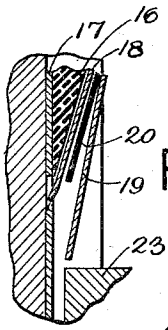


FIG. 4.

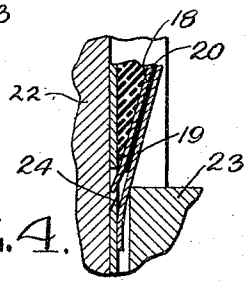


FIG. 5.

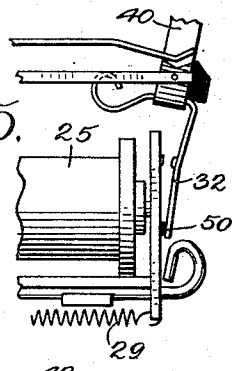
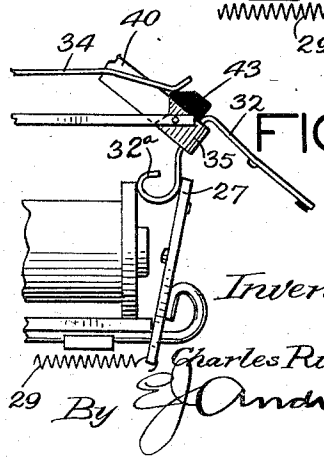


FIG. 6.



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2 SHEETS—SHEET 2.

FIG. 7.

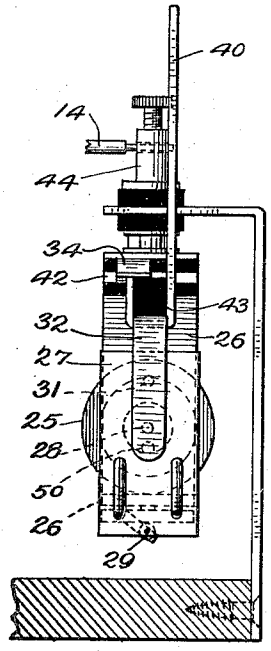


FIG. 8.

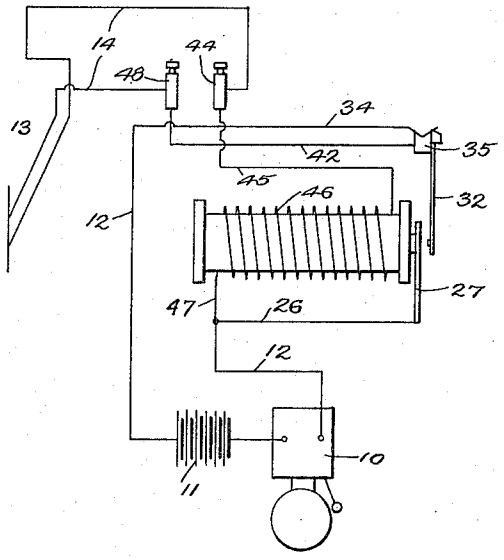
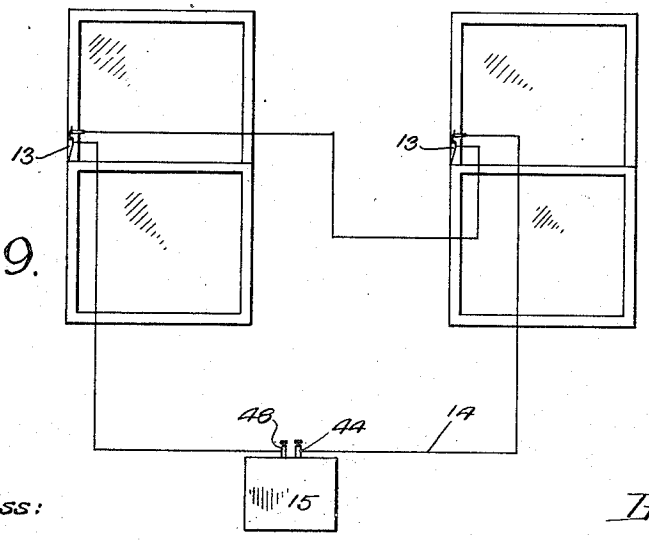


FIG. 9.



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BURGLAR-ALARM.

1,226,009. Specification of Letters Patent. Patented May 15, 1917.

Application filed September 3, 1915. Serial No. 48,810.

To all whom it may concern:

Be it known that I, CHARLES RIESER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Burglar-Alarms, of which the following is a specification.

This invention relates to alarms or signals to be used wherever it is desired to have an alarm given when some member, such as a window or a door, is disturbed, and relates particularly to alarm apparatus which is more or less portable, and at the same time is adapted to be connected with a plurality of windows or doors or other movable members.

One of the objects of the invention is to produce an alarm that will continue to operate when once set in operation without reference to what may be done with the mechanism which initiated the operation of the alarm.

It has for a further object providing means for conveniently locking the movable parts of the apparatus so that it may be safely transported from place to place and also means for testing the various portions of the system in order to determine whether they are in proper working condition.

Other objects of the invention will be apparent upon a consideration of the accompanying drawings and the description thereof contained herein.

Figure 1 of the drawings is an elevation of an alarm mechanism together with the operating switch, which embody the features of my invention. Fig. 2 is an elevation of the operating switch. Fig. 3 is a fragmental view of the operating switch in one position. Fig. 4 is a fragmental view of the operating switch in another position. Fig. 5 is a fragmental view of the alarm mechanism showing the members in one position. Fig. 6 is a fragmental view of the alarm mechanism showing the members in another position. Fig. 7 is an end view of the alarm mechanism. Fig. 8 is a diagrammatic view showing the circuits of the mechanism; and Fig. 9 is a diagrammatic view showing the application of the alarm to two windows.

The apparatus comprises three circuits or branches of circuits. For convenience I call them the operating circuit, the alarm circuit and the shunt circuit. The alarm circuit includes the bell 10, or any suitable electrical alarm, a battery 11, or any suitable source of electric energy, wires 12, the switch-bar 34, and block 35; the operating circuit includes bar 42, post 48, wires 14, the operating switch 13, post 44, wire 45, the electro-magnet coil 46, and wire 47; and the shunt branch or circuit includes wire 37, post 36, a framepiece 26 for the electro-magnet, armature 27 of the electro-magnet, contacts 30 and 31 and the member 32. These branch circuits are so related that the alarm circuit may be closed through either the operating circuit or the shunt circuit, or both, as the respective terminals of all of the circuits are connected.

The operating switch is adapted, in the manner hereinafter described, to be placed in contact with a window sash in such a manner that when the sash is either raised or lowered the switch will be opened, and the alarm mechanism will be set in operation. The operating circuit 14 is at all times closed through the alarm circuit when the device is set for operation, and the alarm mechanism is constructed so that, when the operating circuit is opened, a switch in the shunt circuit will be closed and the alarm circuit will be closed through the shunt circuit and the alarm will be set in operation, and will continue until the shunt circuit or the alarm circuit itself is opened, without reference to the closed or open condition of the operating circuit.

The operating switch comprises an insulation member 16, upon one edge of which is mounted a metal strip 17 and upon the other edge metal strips 18 and 19 insulated from each other by an insulation member 20. The upper end of the strip 18 is electrically connected with one wire of the circuit 14, while the lower end of strip 18 is normally electrically connected with strip 19 through strip 17. The upper end of strip 19 projects upwardly above the insulation member and has a plurality of openings 20^a through which a metal pin 21 may be passed, the pin being forced into the frame 22 of the window thereby supporting the switch 13, and forcing the end of the strip 19 into electrical contact with the shoulder of the pin 21. The pin 21 thus close the circuit between the other wire 14 and the strip 19.

When the switch is set in position for operation the pin is placed so as to support the switch, and the sash forces the lower end of the strip 19 against the strip 17 as indicated

in Fig. 1, and the operating circuit is then closed as hereinafter described. If, then, the window sash is forced downwardly strip 19 will spring away from strip 17, as indicated in Fig. 3. If, however the sash 23, when in the position shown in Fig. 1, is forced upwardly the strip 19 will be sprung inwardly, forcing the strips 20 and 18 inwardly until the lower end of the strip 18 which projects into the aperture 24 of the strip 17 is forced away from its contact with the strip 17, as shown in Fig. 4; so that, after the switch has been set in position, if the window is either raised or lowered the operating circuit will be opened.

When the operating circuit is opened the shunt circuit will be closed, causing the alarm to sound, in the following manner: The alarm mechanism comprises an electromagnet 25, the coil 46 of which normally is connected in the operating circuit in series with the alarm circuit. The coil however is composed of fine wire so that the current flowing therethrough is altogether too slight to sound the alarm, being merely sufficient to hold the armature 27 against the core 28 of the electromagnet in opposition to the spring 29. However when the operating circuit 14 is opened the electromagnet releases the armature 27 and the spring 29 forces it backwardly, so that electric contact is made between the contact 30 on the armature and a contact 31 on the strip 32, and this closes the alarm circuit through the shunt branch. The complete circuit then comprises connecting wires 12, bell 10, battery 11, the metallic strip 34, metallic block 35, strip 32, contacts 30 and 31, armature 27, framepiece 26, post 36, and connecting wire 37.

In practice the operation of the mechanism is as follows: The window sash, on being raised or lowered, opens the operating switch 13, demagnetizes the magnet 25, allowing the shunt circuit to be closed at the contacts 30 and 31, and the alarm is sounded, and the alarm will continue to sound until the alarm circuit is in some manner opened. When the system is to be reset the switch 13 is set in its closed position, the armature 27 is forced against the core 28 of the electromagnet 25, and the electromagnet thus holds open the alarm circuit.

In order to conveniently test the circuits and set the mechanism a lever 40 is provided. To this lever, which is pivoted at the point 41 to the framepiece 42, is fixed a metallic block 35 and an insulation block 43. When the lever stands in its upright position, as shown in Fig. 1, electric contact is made between the strip 34 and the frame of the mechanism through the block 35, and the operating circuit is closed through wires 14, post 44, connecting wire 45, coil 46 of the electromagnet, connecting wire 47, alarm circuit, framepiece 42, and post 48 to the operating circuit. When lever 40 is in this position, armature 27 may be in the upright position shown in Fig. 1 or it may be in the position indicated by the dotted lines in Fig. 1 thus closing the alarm circuit. If the armature is in its upright position against the core 28 the armature will remain in contact with the core so long as the operating circuit is closed; and, hence, by forcing the lever 40 outwardly to the position indicated in Fig. 5 strip 32 will force the armature 27 against the core, and if when the lever 40 is then moved to the vertical position, the armature 27 remains in contact with the core, the operating circuit is known to be closed. If however the armature is forced backwardly, by the spring 29, against strip 32, an open operating circuit is indicated. When the lever is in the outward position, as shown in Fig. 5, an insulation block 50 prevents the closing of the shunt circuit branch.

When lever 40 is in the forward position, indicated in Fig. 6, the curved end 32^a, of the strip 32, locks armature 27 out of contact with the core, and at the same time strip 34 has its forward end forced upwardly on the insulation block 43 and the contact between strip 34 and block 35 is broken, and both the operating circuit and the shunt circuit are locked open.

When it is desired to test the alarm circuit when the apparatus is in its set position, it is necessary only to force the lever inwardly, this causes the end 32^a to force the upper end of the armature 27 away from the core, and, then, by throwing the lever to its vertical position, indicated in Fig. 1, contact will be made between the points 30 and 31, and the alarm circuit will be closed, and will remain so as the electromagnet is too weak to force the armature, against the spring 29, back to the set position.

The switch 13 is wedge shaped, so that when an attempt is made to force the window sash upward, not only will the alarm be sounded, but also the switch will prevent upward movement of the sash. The upper corner 55 of the strip 17 is sharp and projects slightly beyond the inner surface of the strip and thus prevents upward movement of the switch when the sash is raised.

It will thus be seen that by means of the lever 40 the circuits may be locked open, or either circuit may quickly and conveniently be tested, and also the armature may be forced into or away from its set position.

Although I have described with considerable detail the various elements of the mechanism which I prefer to illustrate my invention, yet various changes may be made by those skilled in the art without departing from the spirit of my invention as disclosed by the following claims.

I claim as my invention—

1. A burglar alarm comprising an operating circuit branch, and an alarm circuit branch, said branches normally connected in series, and means for testing said branches independently and for locking said branches open.

2. In a burglar alarm, an operating circuit, an alarm circuit, a shunt circuit branch, a switch in said shunt circuit, a switch in said alarm circuit, a lever; the respective terminals of said circuits being connected; when said lever is in one position, both of said switches being open; when said lever is in a second position, said shunt circuit switch being closed or open and said alarm circuit switch being closed; when said lever is in a third position, said shunt circuit switch being opened and said alarm circuit switch being closed.

3. In a burglar alarm, an operating circuit and an alarm circuit; said two circuits being normally connected in series; a shunt circuit connecting the terminals of said alarm circuit; and a testing member; when said member is in one position, said alarm circuit and said shunt circuit both being open; when said member is in a second position, said alarm circuit being closed and said shunt circuit being open; when said member is in a third position, said alarm circuit being closed and said shunt circuit being opened or closed.

4. The combination of a burglar alarm and testing means; said alarm comprising an operating circuit, an alarm circuit, and a shunt circuit; the respective terminals of said circuits being connected; said operating circuit including an electro-magnet; said shunt circuit including a switch operated by an armature adjacent said electro-magnet; when said testing means is in one position, both said alarm and said shunt circuits being locked open; when said testing means is in second position, said armature being against said electro-magnet and the shunt circuit switch being open; when said testing means is in a third position, said armature being free to move away from said electro-magnet to close said shunt circuit when said operating circuit is open, and resilient means tending to move said armature away from said electro-magnet.

In testimony whereof I hereunto set my hand.

CHARLES RIESER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."