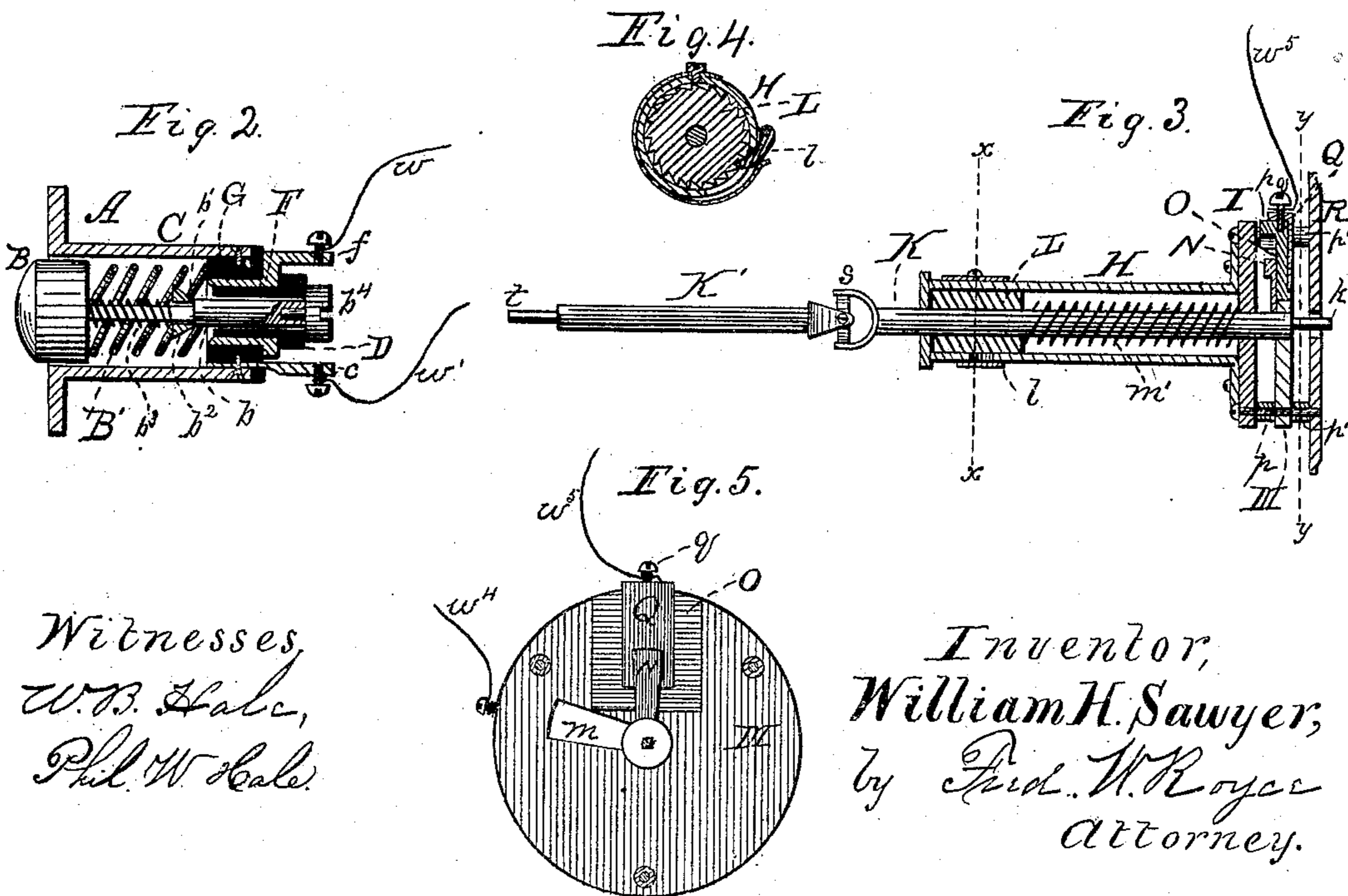
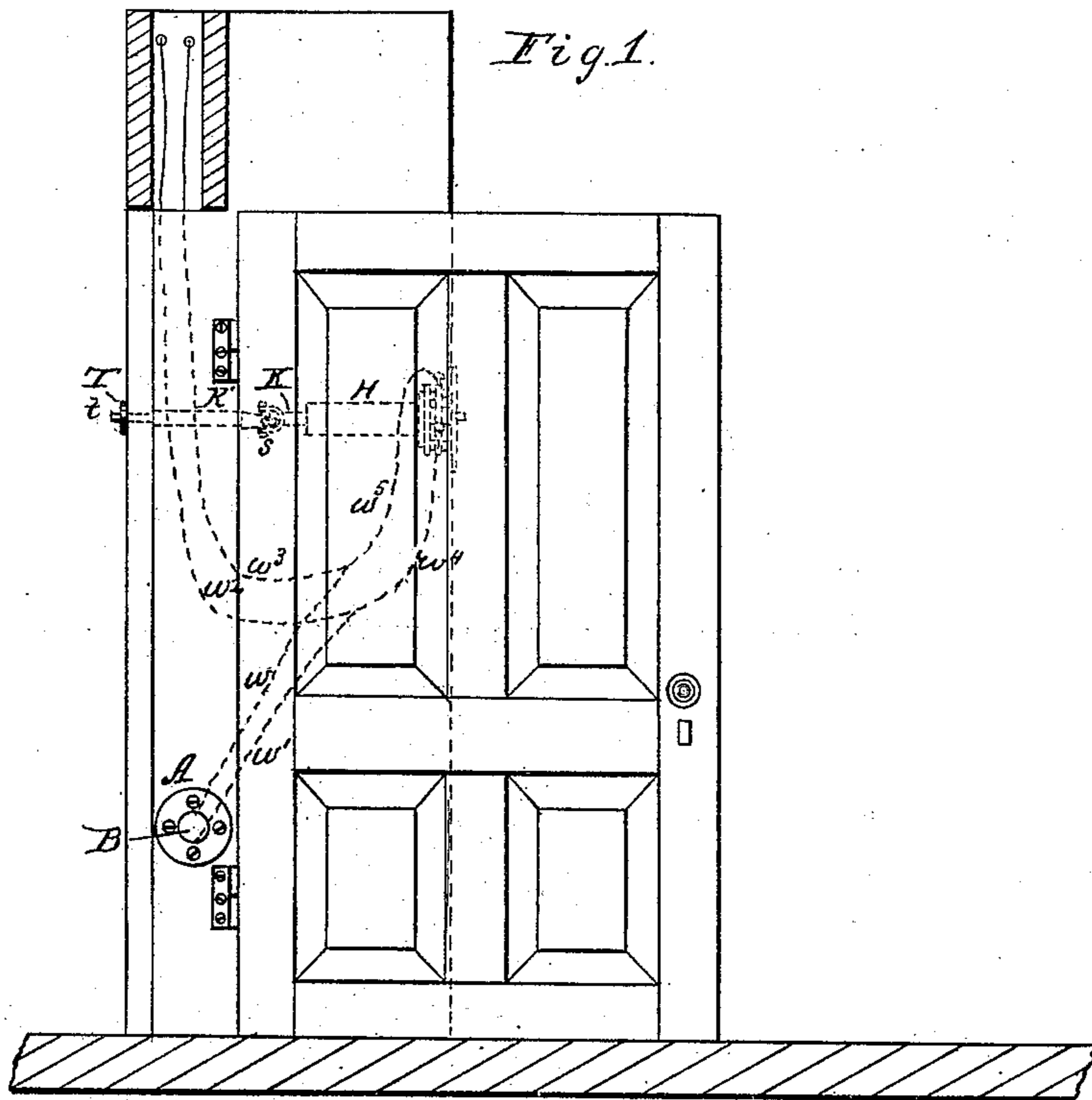


(No Model.)

W. H. SAWYER.
CUT-OUT FOR BURGLAR ALARMS.

No. 252,260.

Patented Jan. 10, 1882.



UNITED STATES PATENT OFFICE.

WILLIAM H. SAWYER, OF PROVIDENCE, RHODE ISLAND.

CUT-OUT FOR BURGLAR-ALARMS.

SPECIFICATION forming part of Letters Patent No. 252,260, dated January 10, 1882.

Application filed September 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. SAWYER, a citizen of the United States of America, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Cut-Outs for 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to a device by means of which a person with knowledge how to use the same may temporarily short-circuit the circuit-closer in a burglar-alarm electric circuit, and be enabled to open a door guarded by a burglar-alarm without causing said alarm to sound, and having again closed the door may restore the circuit to its normal condition. Its object is to enable authorized persons to enter a house by a door so guarded without disturbing the inmates, as in the case when one or more members of a household should be out after the others have retired at night.

I will describe and illustrate my present invention in connection with the circuit-closer for burglar-alarms which is shown and described in Letters Patent No. 187,674, granted to me on the 20th day of February, 1877, though it may be used with other circuit closers as well.

In the accompanying drawings, Figure 1 is a view in elevation of an open door and a part of its casing, with the circuit-closer arranged in the door-jamb and the cut-out, shown in dotted lines, arranged in the casing. Fig. 2 is a partial longitudinal central section of the circuit-closer. Fig. 3 is a similar section of the cut-out. Fig. 4 is a section of the same on a plane indicated by the line $x x$; and Fig. 5 is a section in a plane indicated by line $y y$.

In Fig. 1 the circuit closer A is shown in full lines as arranged in the jamb of the door, with its piston B projecting, as shown in Fig. 2. This piston is metallic, and slides in a hollow metallic case, C, and has extending rearwardly from it a rod, b , having a shoulder, b' , and carrying a sliding metal collar, b^2 , which is normally forced against said shoulder by a spring, b^3 . The portion of the rod b rearwardly beyond the shoulder slides in a tubular

guide, D, of non-conducting material, which is supported by a tubular metallic shell, F, which is in turn supported by an insulating-band, G, the main portion of which fits in the end of the metal case C. The metal shell F has a rearwardly-projecting finger f , and the case C has a rearwardly-projecting finger c , these fingers being the points to which the terminals of the alarm-circuit are connected. The piston B is forced outward by a spring, B' , its outward movement being limited by a head, b^4 , of the rod b , which strikes the non-conducting guide D. When the door is closed its rear edge forces the piston B and its rod b rearwardly, and the sliding metallic collar b makes contact with the inner end of the metal shell F, thus forming a metallic connection between the fingers f and c through shell F, collar b^2 , rod b , piston B, and case C.

Referring to Fig. 1, the wires $w w'$ lead from the fingers f and c and join with the wires $w^2 w^3$, which lead respectively to the opposite poles of an electric battery, (not shown in the drawings,) and in one of these wires is supposed to be included an alarm, which is held out of operation when the circuit is closed, but sounds when the circuit is broken. The circuit, as will be seen, would be broken at the circuit-closer by opening the door, and it is to prevent the sounding of the alarm by such breaking which is the function of the cut-out, which I will now describe.

The letter H designates a hollow cylindrical casing. (Shown in section in Fig. 3.) It is provided with a head, I, of greater diameter than itself, and having a central aperture. The opposite end of the case is also closed, except a central aperture, and a metal rod, K, passes through the casing and the apertures in its closed rear end and head I. The rod has fixed upon it, inside the casing, a bevel-faced ratchet-wheel, L, with the teeth of which engages a spring-pawl, l , which is secured to the outside of the casing, and has its tip projecting inwardly through an opening in the same. A spiral spring, m' , surrounds the rod K, inside the casing, and has one end bearing against the ratchet-wheel and the other against the head I, so that the rod K, being loose in its bearings, is normally forced rearwardly, the ratchet-wheel bearing against the end of the casing outside of the head I. The rod K carries a radial metallic finger, N.

In front of the head I a metal disk or plate,

M, is supported by pillars p . This plate has a central aperture of proper size to receive the rod K, and from this aperture is cut a radial slot, m , of proper size and shape to permit the passage of the finger N. A portion of the entire thickness of the plate M is cut away from its perimeter toward its center, and in lieu of the metal cut away is inserted a block, O, of non-conducting material, preferably hard rubber. A flush metal plate is let in the outer face of this block of non-conducting material, said plate being narrower and shorter than the block, so that it will not touch the metal plate M.

In the outer edge of the plate Q is fixed a metal screw, q , and a similar screw, q' , is fixed in the edge of plate M, these screws serving as means of attaching the wires $w^4 w^5$, which form a portion of a short circuit, as will be seen farther along.

In front of the plate M an escutcheon, R, is supported by short pillars $p' p'$, and is provided with a central key-hole, through which a key may be inserted to engage the square pin k , projecting from the end of rod K, and also with suitable screw-holes to enable it to be secured to the inside of the door-casing, or in other suitable position.

To the rear end of the rod K another rod, K', is attached by a universal joint, s , said rod K' having a squared pin, t , projecting from its free end to enter a key. The end of the rod K' is to have a bearing in an escutcheon, as at T, fixed upon the outside facing of the door-frame, or in any other suitable position, and the universal joint obviates the necessity of arranging the rods K' and K directly in line, should convenience require otherwise.

The cut-out as now described is to be located preferably behind the jamb, with the squared pin t of rod K' arranged for access with a key from outside the door, and the squared pin of the rod K for access from the inside. Supposing the wires to lead from the circuit-closer to the battery, as shown in Fig. 1, the branch wires w^4 and w^5 lead from said wires to the screw q of plate Q and screw q' of plate M, respectively. Now, when a person desires to open the door from the outside without breaking the alarm-circuit and sounding the alarm, he places his key upon the pin t , and, while turning it, presses inwardly. This causes the rods K and K' to turn and the finger N to bear against and traverse the inner face of plate M until it reaches the aperture m , and when it reaches said aperture it slips through the same to the outer side of plate M. When the person turning feels the rods yield as the finger passes through he turns his key, say, one tooth of the ratchet-wheel further and relaxes his inward pressure, so that the spring m' then draws the finger N against the outer face of plate M. After this a predetermined extent of movement, which will be measured by the click of the pawl upon the ratchet-wheel, will bring the finger N upon the metal plate Q, and metallic connection will

then be established between the wires w^4 and w^5 through screws q and q' , plate Q, finger N, rod K, and plate M, through the aperture in which said rod slides in contact. The wires w^2 and w^3 are thus electrically connected independently of the wires w and w' , and the circuit-closer is short-circuited, so that the door may be opened without sounding the alarm. Having entered and closed the door the person may restore the circuit to its normal condition by placing his key upon the pin k and turning it until the finger N finds the slot m , through which it will be drawn by the action of spring m' .

The plate Q is to be placed at different distances from the slot m in the various cut-outs, and the authorized users should keep secret the number of clicks of the pawl which indicate the completion of the short circuit by contact of finger N and plate Q.

I may use a continuous straight rod instead of the jointed rods K and K', and do not confine myself to any particular position for the location of the cut-outs, it only being necessary that the ends of the rods or rod shall be accessible from within and without respectively.

What I claim is—

1. In a cut-out for burglar-alarm circuits, the combination of the rod K, forced in one direction by a spring, and provided with finger N, the plate M, and the insulated plate Q, substantially as described.

2. In a cut-out for burglar-alarm circuits, the combination of the casing H, the rod K, arranged to rotate and move longitudinally in said casing, the finger projecting from said rod, the centrally-perforated and suitably-supported plate M, having slot m , and the insulated plate Q, carried by said plate M, substantially as described.

3. The combination of the casing H, the rod K, provided with the ratchet-wheel, and means for operation by a key, a pawl to engage said ratchet-wheel, a spring to move said rod in one direction, the finger projecting from said rod, the suitably-supported plate M, having a central aperture, and a radial slot opening into said aperture, and the insulated plate Q, all arranged to operate substantially as described.

4. A burglar-alarm circuit provided with a circuit-breaker and a cut-out arranged to short-circuit said circuit-breaker, and provided with means of operation from both sides of a wall or door, substantially as described.

5. The combination, with the rod K, constructed and arranged in a cut-out, as described, of the rod K', connected therewith by a universal joint, substantially as and for the purpose set forth.

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

WILLIAM H. SAWYER.

Witnesses:

GEORGE B. BARROWS,
ALICE J. BOWEN.