June 5, 1934. D. D. GIBSON, JR 1,962,010

BURGLAR ALARM

Filed Dec. 17, 1931 2 Sheets-Sheet 1

Fig. 1.

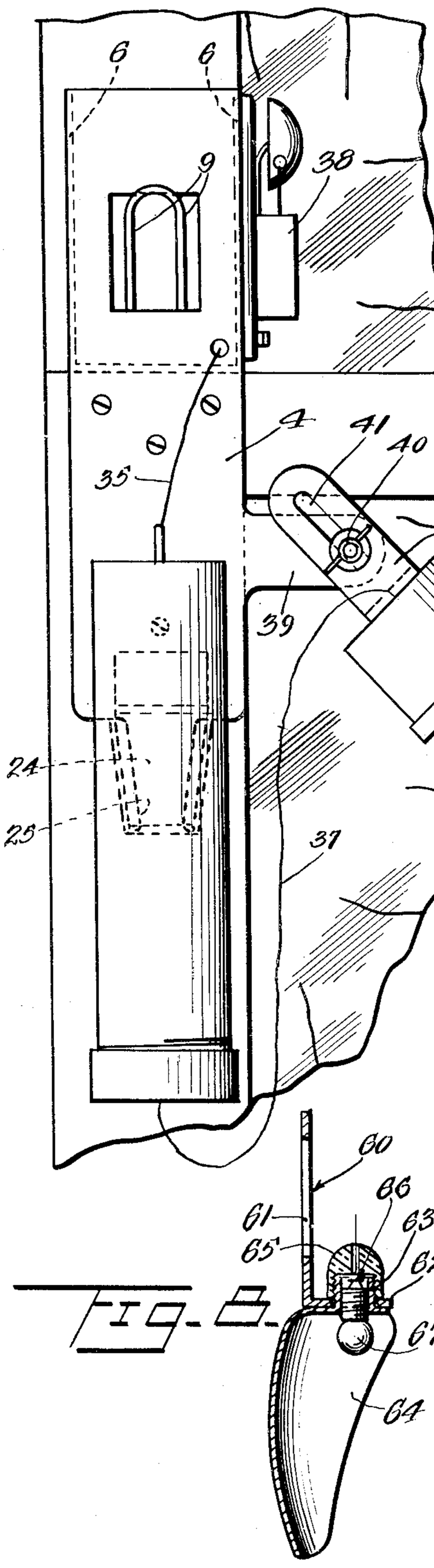
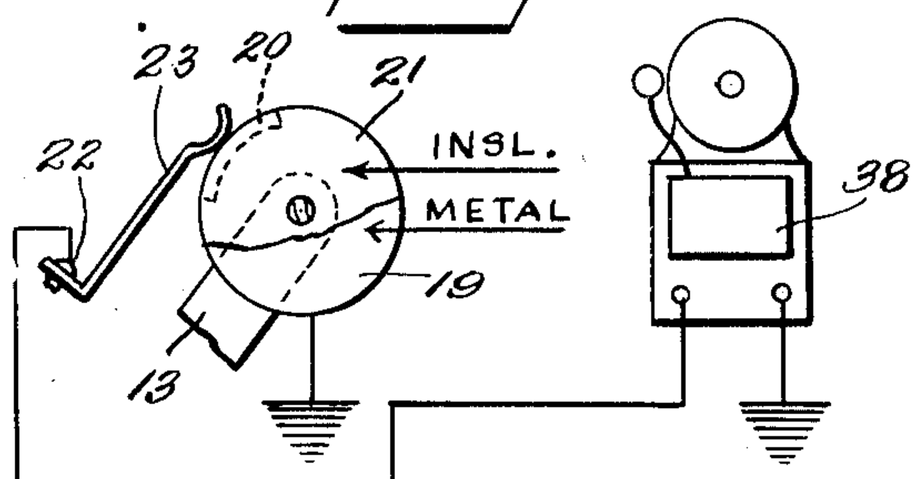


Fig. 3.



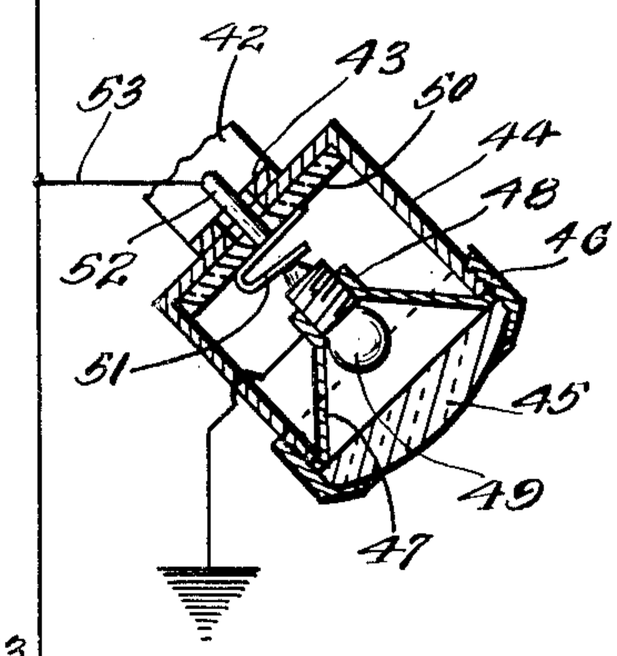


Fig. 8.

Inventor
D. D. Gibson, Jr

By Watson E. Coleman
Attorney

June 5, 1934. D. D. GIBSON, JR 1,962,010

BURGLAR ALARM

Filed Dec. 17, 1931 2 Sheets-Sheet 2

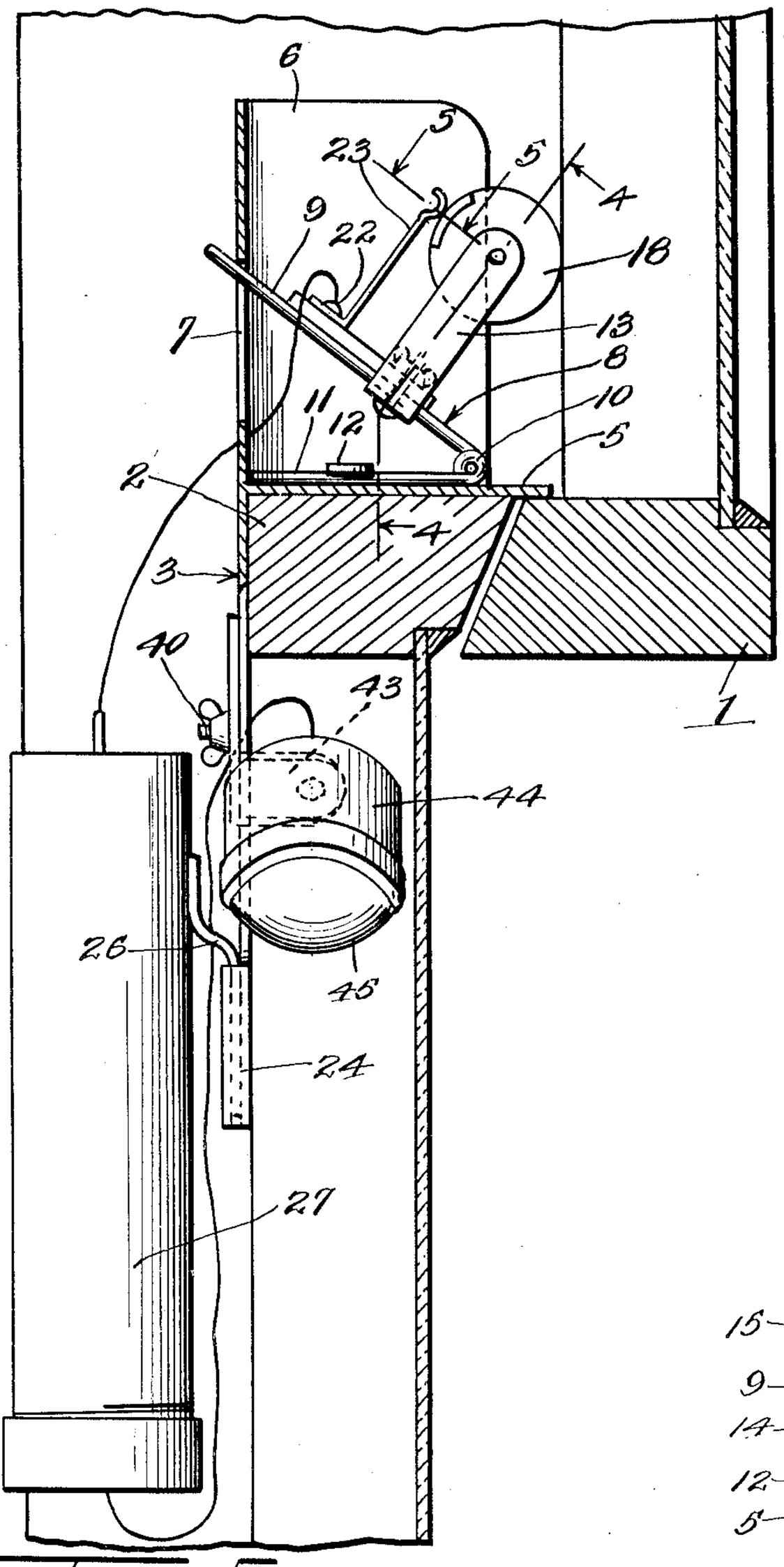


Fig. 2.

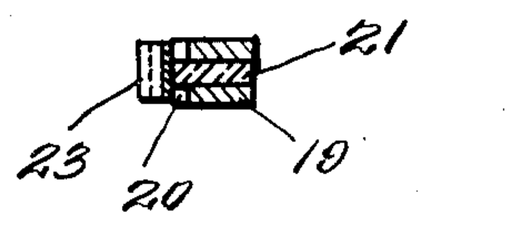


Fig. 5.

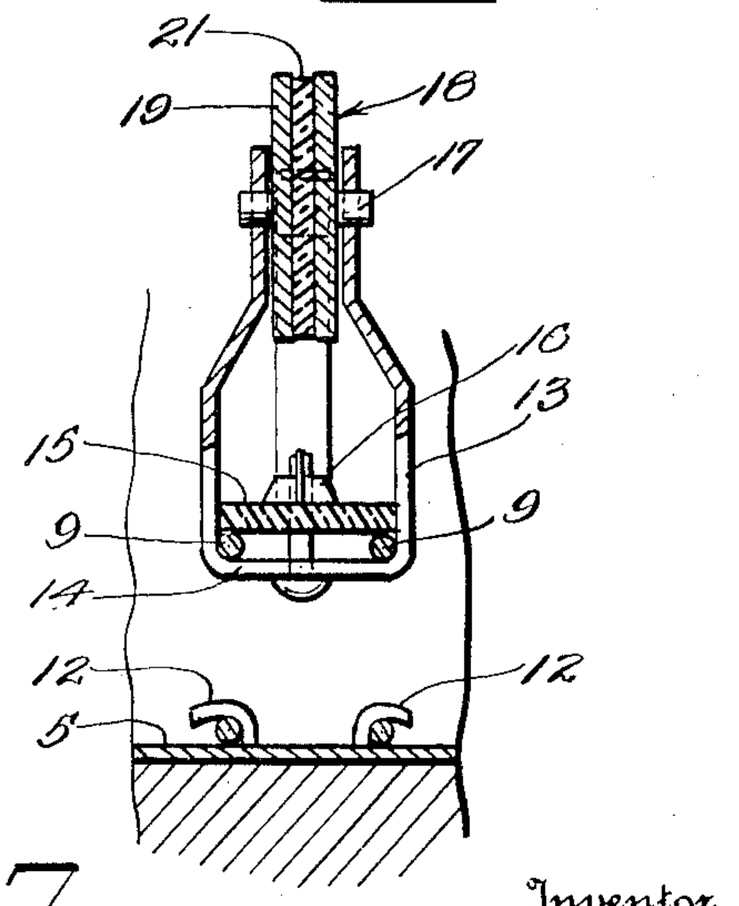


Fig. 4.

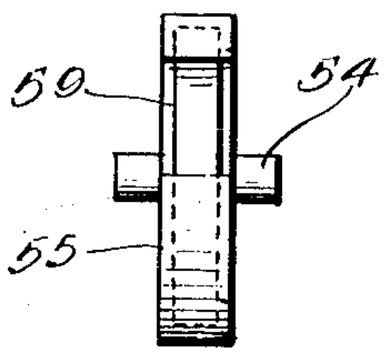


Fig. 6.

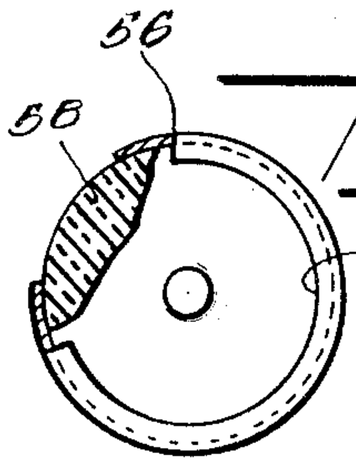


Fig. 7.

Inventor

D. D. Gibson, Jr.

By Watson E. Coleman

Attorney

Patented June 5, 1934 1,962,010

UNITED STATES PATENT OFFICE

1,962,010

BURGLAR ALARM

David D. Gibson, Jr., Birmingham, Ala.

Application December 17, 1931, Serial No. 581,719

3 Claims. (Cl. 200—54)

This invention relates to burglar alarms and pertains particularly to an alarm which is operated by and upon the movement of a closure element.

The primary object of the present invention is to provide an alarm device of a compact nature so that the same may be readily mounted as a unit in position for use particularly upon a sash of a window.

Another object of the invention is to provide an alarm which is electrically operated and which has a novel means for energizing the circuit upon movement of an element of the closure adjacent which it is placed.

A still further object of the invention is to provide a novel burglar alarm in which the several elements thereof are detachably mounted upon a carrier plate which is designed to be conveniently placed upon a sash of a window and in which one of said elements which constitutes a circuit controlling means and is in the nature of a switch, is in the form of a rotatably mounted body which frictionally engages an adjacent sash to be rotated thereby when the said sash is moved so as to bring about the closing of the alarm signal circuit.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:—

Figure 1 is a view in front elevation of the structure embodying the present invention:

Figure 2 is a view in vertical transverse section through the meeting horizontal rails of a window showing the device in operative position and partly in side elevation and partly in vertical section;

Figure 3 is a circuit diagram of the present device with portions thereof shown in section and in detail;

Figure 4 is a sectional view taken upon the line 4—4 of Figure 2;

Figure 5 is a sectional view taken upon the line 5—5 of Figure 2;

Figure 6 is an edge view of a modified form of wheel member which forms a part of a circuit controlling element;

Figure 7 is a view in side elevation of the wheel shown in Figure 6 with a portion thereof in section;

Figure 8 is a longitudinal sectional view through a modified form of signal light.

Referring now more particularly to the drawings wherein like numerals of reference indicate corresponding parts throughout the several views, the numerals 1 and 2 indicate the meeting horizontal rails of upper and lower sash respectively of a window. The device embodying the present invention is shown mounted upon the lower sash at one side and adjacent the top thereof and is indicated as a whole by the numeral 3. The device comprises an elongated plate member 4 which constitutes a carrier for the several elements embodying the signal device and as shown in Figure 2, there is secured to one face of this plate to extend at right angles therefrom, the shelf-like portion 5 which, when the plate is secured to the face of the lower window sash, positions across the top rail 2 and is of sufficient length to overlie the space between the rails 1 and 2 so as to prevent the extension of an instrument between the rails for the purpose of defeating the operation of the signal. At each side of the shelf or bracket-like portion 5 of the carrier plate 4 there extends upwardly the side plates or wings 6 which are integrally connected with the adjacent longitudinal edges of the plate 4 as shown.

The upper portion of the plate 4 above the bracket 5 has a window opening 7 formed therethrough and between the wings 6 there is mounted upon the bracket 5 a spring member 8 which has a pair of legs 9 which are normally disposed at an inclination from the horizontal and which are connected at their outer ends as illustrated in Figure 1 and at their other ends are connected through the medium of the convolutions 10 with horizontally disposed leg portions 11 which rest upon the bracket 5 and are held in position by the tongue members 12 which may be struck out of the bracket and bent up and over the legs in the manner illustrated in Figure 4. It is, of course, to be understood that this is only the preferred method of securing the legs of the spring member to the bracket plate and the invention is not to be confined to this method as other suitable means may be employed for holding the spring in position.

The legs 9 of the spring member 8 pass through a substantially U-shaped bracket 13, across the yoke portion 14 thereof and are se-

cured to the yoke portion of the bracket by the elongated plate of insulation material 15 which extends longitudinally of the legs 9 and is connected with the yoke 14 of the U bracket by the thumb nut and screw assembly 16. The leg portions of the U bracket 13 are connected adjacent their free ends by the short shaft 17 upon which is securely mounted the circular body 18. This circular body which forms a part of a novel circuit controlling switch is preferably constructed of a pair of disks each of which is indicated by the numeral 19 and each of which has a portion of its periphery cut away circumferentially as indicated at 20, separated by a complete disk 21 of insulation material. It will thus be seen that a wiper element engaging the periphery of the rotary member 18 will normally be in electrical engagement with the metal disks 19 until the cut away areas 20 come into position therebeneath whereupon the portion of the insulation disk 21 between these areas will alone support the wiper and thus break the electrical connection between the same and the metal disks 19.

The insulation plate 15 has mounted thereon and secured thereto by the screw 22 a wiping contact finger 23 which has its free end resiliently engaging the periphery of the circular element 18.

At the other end of the plate 4 from the bracket 5 and wings 6 there is formed a socket 24 by cutting away the sides of the plate to form a downwardly tapering extension and then turning any portions of this extension along each longitudinal edge to form the guide flanges 25. This socket receives a similarly tapered supporting hook 26 which is secured to a cylinder 27 which is preferably, though need not necessarily be, formed of metal. This cylinder 27 constitutes a container for dry battery cells 28 and at one end it is closed except for a relatively small central opening 29 while at its other end it is closed by a cap 30 which is threaded thereon and which has a small central opening 31 formed therethrough. At the end through which the opening 29 is formed, which will be referred to as the head end of the cylinder, there is positioned upon the inside thereof, the disk 32 of insulation material, upon the inner face of which a metal contact 33 is mounted which connects with a contact pin 34 which passes through the opening 29 to the exterior of the cylinder. This contact pin 34 is connected by the electric wire 35 with the wiping contact finger 23 at the point 22. Within the other end of the cylinder 27 there is positioned a cup 36 formed of a suitable insulation material, through which there extends one end of the electric wire 37 which is insulated from contact with the cap 30 and which has electrical connection with the spring element 38.

This spring element has one end mounted in the insulation cup 36 and has its other end pressed against and in electrical contact with one pole of the adjacent battery cell 28. As will be readily understood the opposite pole of the other battery cell has electrical connection with the contact 33.

Mounted upon one of the wing members 6 is an alarm element which is indicated generally by the numeral 38 and which is illustrated as a bell, although as will be readily understood, this may be a buzzer or any other suitable electrically operated sound producing device. To one of the poles of this sound producing device 38 the other end of the wire 37 is connected, while the other pole thereof is grounded to the metal plate 4. As will be seen from the circuit diagram in Figure 3 the metal disks 19 of the rotating element 18 are also electrically connected with or grounded to the plate 4.

Formed integral with the plate 4 and extending laterally from one edge thereof is the arm 39 which carries a thumb nut and screw assembly which is indicated by the numeral 40. The screw of the assembly 40 passes through the elongated slot 41 which is formed in the adjustable bracket arm 42, one end of this arm being turned laterally as indicated at 43 for attachment to the end of a cylindrical light casing 44. This casing 44 has its other end closed by the bull's-eye 45 which is held in place by the usual threaded ring 46, which ring also retains in position behind the bull's-eye the reflector 47 at the base of which is formed the threaded socket 48 for the reception of the base portion of an incandescent bulb 49.

It will thus be seen that the base portion of the incandescent bulb will be grounded through the metal reflector and metal casing 44 of the plate 4. In the bottom of the light casing 44 is a plate 50 of insulation material to which is attached the spring contact 51 against which the center contact of the incandescent bulb 49 bears and this spring contact connects with the terminal post 52 which passes through an aperture in the bottom of the casing 44 and in the portion 43 of the bracket arm 42, from which it is free from electrical connection. A suitable electrical connection is made between the terminal post 52 and the wire 37, as indicated at 53.

In operation, the plate 4 is mounted as previously described, upon the face of one vertical bar of the lower window sash with the bracket portion 5 upon the top bar 2 thereof and extending across the slot between this bar and the adjacent lower bar 1 of the upper sash. The rotary element 18 will then be so disposed upon the spring support 8 as to be held by the spring support in firm contact with the adjacent vertical side bar of the upper sash so that as will be readily seen, any attempt to move the upper sash downwardly or to move the lower sash upwardly will result in the rotation of the member 18. With the bracket plate so mounted, the light 44 in position upon the arm 39 and the battery casing mounted upon the lower portion of the plate in the manner shown, the element 18 is then turned until the contact finger 23 engages only the insulation disk 21 as shown in Figure 2.

The alarm is now set and as soon as either sash is moved and the member rotated a slight distance the finger 23 will move away from the cut-out portions 20 of the metal disks 19 and will be brought into electrical contact with the disks and thus complete an electrical circuit through the sound producing alarm 38 and the light 44.

In Figures 6 and 7 there is shown a modified form of the element 18 wherein the shaft 54 extends through the center of and is electrically connected with the metal cup 55 which has a circular wall portion 56 which is turned over at its free edge as indicated at 57 over an insulated disk 58 of insulation material. A relatively long strip of the circular wall portion of this cup is cut away as indicated at 59 so that the wiper 23 will be held from electrical contact with the metal cup thereby.

In Figure 8 there is shown a modified form of the light structure illustrated in Figures 1 to 3 inclusive. In this form the bracket which corresponds to the bracket 42, is indicated by the numeral 60 and like the bracket 42 it has longitudinally extending slots 61 therein and one end turned to extend at right angles, as indicated at 62. The end 62 of the bracket 60 has a relatively large aperture therethrough and this aperture receives the internally and externally threaded sleeve 63 which forms an integral continuation of the base portion of the metal reflector 64.

The reflector is held in place by the nut 65 which is formed of insulation material and in this nut is a contact member 66 with which the center contact of an incandescent electric bulb 67 engages, the other contact which is made through the shell of the bulb being grounded to the bracket through the reflector body as will be readily understood. As will be seen when the reflector light shown in Figure 8 is substituted for the one shown in Figure 1 the light instead of being directed in a beam will be thrown outwardly through the window glass to fall upon the would-be intruder and thus place him in full view.

From the above it will be apparent that I have provided a very simple and positive burglar alarm, which is complete within itself, automatic in adjustment, positive in operation and practically instantaneous in operation. Inaccessible to tampering with from the outside, permits the sashes to be left partly open for ventilation purposes, throws a flood of light on the burglar, at the same time an audible signal is given, this being a very novel and effective feature.

While the casing 27 has been illustrated as being of metallic construction it will, of course, be understood that it may, if desired, be made of insulation material such as hard rubber or the like in which case the insulation elements 32 and 36 will not be necessary and the terminal 34 may be secured directly in the end of the casing.

Having thus described the invention, what is claimed is:—

1. An electric circuit controlling device for the purpose described, comprising an element having a base portion and an arm resiliently connected with the base and normally tending to rise therefrom, an upstanding member mounted upon said arm, a circular body rotatably mounted upon said upstanding member, a spring contact mounted upon said arm and having wiping engagement at one end with the periphery of the circular member, means for establishing an electrical connection between the spring contact and a portion of the peripheral surface of the member, the current flow from the member to the spring contact being controlled through the rotation of the member, and means for adjusting the body, rotatable member and spring contact as a unit on and longitudinally of said arm.

2. An electric circuit controlling device of the character described, comprising a resilient arm adapted to be secured to a supporting body and normally tending to rise therefrom, a pair of spaced upstanding arms secured to and adjustable longitudinally of the first arm, a spring contact supported upon the first arm and movable thereon with the upstanding arms, a disk-like member rotatably mounted between said upstanding arms and having a spring contact in wiping engagement with the periphery thereof, said disk member being formed to provide electrical connection with the spring contact throughout a portion of its peripheral extent, a housing in which said unit is mounted, and a wall of said housing having an opening therein through which the free end of the first mentioned arm extends and which limits the upward movement thereof.

3. An alarm circuit controlling device comprising a body having a base portion designed to be mounted upon one of two relatively movable bodies and a pair of arms resiliently connected at one end to the base and normally tending to move away from the same, a substantially U-shaped yoke member encircling said arms, a plate overlying said arms, means coupling said plate with the portion of the U-shaped member passing beneath the arms whereby the plate and U-shaped member may be adjustably secured on the arms, a resilient contact finger secured to said plate and adapted to be connected in one side of a circuit, and a rotatable member mounted between the sides of said U-shaped member and adapted to engage the other of the relatively movable bodies to be rotated by the same upon movement of said bodies relative to one another, said rotatable member being peripherally engaged by the resilient finger and having an electric current conducting portion exposed through a part of said periphery for contact by the finger.

DAVID D. GIBSON, JR.