

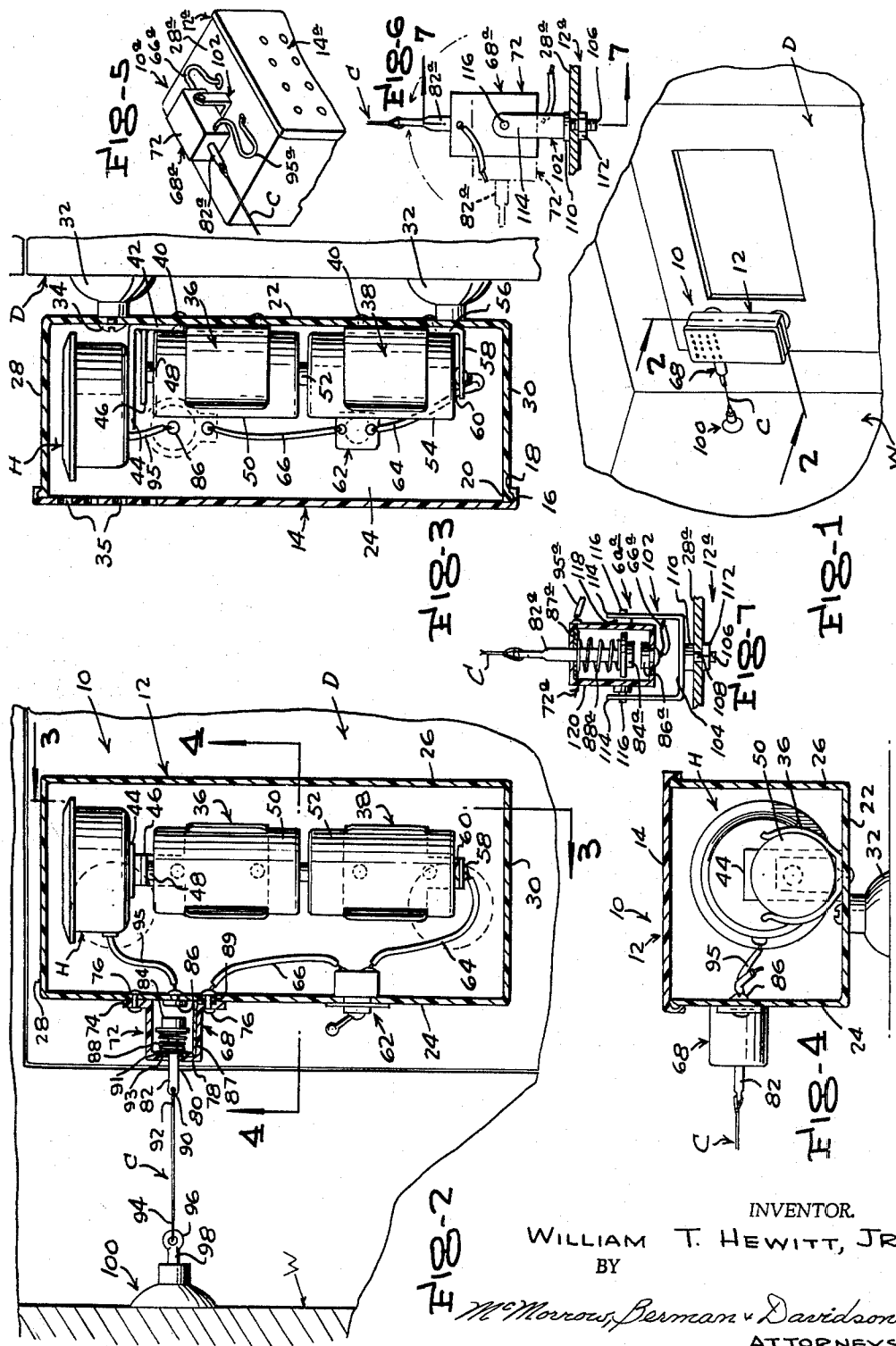
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FIRE AND BURGLAR ALARM

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1

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FIRE AND BURGLAR ALARM

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This invention relates to a novel electrical combination fire and burglar alarm of the audible type.

The primary object of the invention is the provision of a more efficient, more reliable, more easily installed, and more versatile device of the kind indicated, which is adapted for use in domestic and commercial establishments, as well as in automobiles, boats, and the like, with little or no alteration of its components, to produce warnings of unauthorized opening of doors, windows, and the like, as they occur, and to produce warning of fire to which the device is exposed.

Another object of the invention is the provision of a simple and inexpensive device of the character indicated above, which is composed of a small number of uncomplex parts, which are adapted to economical manufacture and assembly.

A further object of the invention is the provision of a device of the character indicated above, which comprises a casing containing an electrical audible alarm member and actuating batteries, and an external spring-closed switch on the casing which is swivelly mounted to enable it to be pivoted through an arc of at least 180°, and rotated 360° relative to the casing, in order to enable positioning the switch for attachment of a cord, operatively secured thereto, to a door, window, or the like, adjacent to the stationary mounting of the casing, the cord being combustible when contacted by fire, to cause closing of the switch and actuation of the audible alarm member.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, specific forms of the invention are set forth in detail.

In the drawings:

FIGURE 1 is a fragmentary and schematic perspective view, showing a device of the present invention installed relative to a door and an adjacent wall;

FIGURE 2 is an enlarged vertical longitudinal section taken on the line 2-2 of FIGURE 1, showing the spring-closed switch in open position;

FIGURE 3 is a vertical transverse section taken on the line 3-3 of FIGURE 2;

FIGURE 4 is a horizontal section taken on the line 4-4 of FIGURE 2;

FIGURE 5 is a fragmentary perspective view, on a reduced scale, of another device of the present invention, involving a pivotally mounted spring-closed switch, shown in horizontal position;

FIGURE 6 is an enlarged fragmentary side elevation of FIGURE 5, showing the spring-closed switch in erect position; and

FIGURE 7 is a vertical transverse section, taken on the line 7-7 of FIGURE 6, and showing the spring-closed switch in open position.

Referring in detail to the drawings, wherein like and related numerals designate like and related parts through-

2

out the several views, and first to FIGURES 1 through 4 thereof, the device therein shown and generally designated 10, comprises an elongated, preferably rectangular, closed casing 12, preferably of dielectric material, having an open front, closed by a removable cover 14. The cover 14 has, around its edges, a continuous lateral flange 16, provided, at its free edge, with a continuous internal detent bead 18, adapted to snap securably over an external bead 20, on the walls of the casing, and located close to the open front thereof.

The casing 12 comprises a back wall 22, first and second side walls 24 and 26, respectively, and top and bottom walls 28 and 30, respectively. The casing is adapted to be mounted to a movable element, such as a door D, by means of suction cups 32, spaced along and secured to the casing back wall 22, as indicated at 34. The cover 14 is provided, in its upper part, with holes 35, facing a horn H, which provide for transmission of sound therefrom to the exterior of the casing 12.

A pair of upper and lower C-shaped spring battery clips 36 and 38, which are similar in structure, but in spaced and reversed relation to each other, are secured to the forward surface of the casing back wall 22, as indicated at 40 in FIGURE 3. The upper clip 36 has a reclining L-shaped bracket, on its upper edge, which is composed of an upstanding vertical portion 42, which bears against the back wall 22 and a forwardly extending horizontal arm 44, upon which is fixed, in a suitable manner, a flat compact electrical horn H. A horizontal upper contact arm 46, spaced below the arm 44, extends forwardly from the vertical portion 42 of the bracket, with which the center contact 48 of an upper battery 50, engaged in the upper clip 36, is adapted to be engaged, with its bottom contact engaged with the center contact 52 of a lower battery 54, engaged in the lower clip 38.

The lower battery clip 38 has, on its lower edge, a pendant, reclining bracket, composed of a downwardly extending vertical portion 56, bearing against the casing back wall 22, and a forwardly extending horizontal lower contact arm 58, having thereon an upstanding contact 60, which engages the bottom contact of the lower battery 54.

An on-and-off switch 62 is mounted through a lower part of the first side wall 24 of the casing 12, to one side of which is connected a wire 64, leading from the lower contact arm 58. A wire 66 leads from the other side of the switch 62 to one side of a spring-closed switch 68.

The spring-closed switch 68 comprises a dielectric housing 72, having an open inner end surrounded by a lateral mounting flange 74, which is secured to the outer surface of the first casing side wall 24, as by means of rivets 76. The housing 72 has an outer end wall 78, formed with a centered opening 80, through which works an elongated rod 82 which has an enlarged diameter contact head 84, on its inner end, which is aligned with and opposed to a contact 86, mounted through the side wall 24. A coil spring 88 is circumposed on the rod 82, and is compressed between the outer end wall 78 of the housing 72 and the contact head 84, which serve to bias the contact head 84 into circuit closing engagement with the contact 86, for actuating the horn H.

A buss bar 87 extends along the sidewall of the housing 72 and has, on one end thereof, a downwardly extending terminal 89 which is traversed by and in contact

3

with the lower rivet 76, to which the wire 66 is connected. The buss bar 87 has an upstanding terminal 91, on its other end, which extends across the inner surface of the outer end wall 78 of the housing 72 and has an opening 93, which passes the rod 82, and whose edge is in contact therewith. A wire 95 leads from the contact 86 of the switch 68, to one side of the horn H, whose other side is grounded to the upper contact arm 46, through the support arm 44 of the bracket of the upper battery clip 36.

The outer end of the rod 82 is formed with an opening 90, through which one end of a cord C is tied, as indicated at 92, and whose other end is similarly tied, as indicated at 94, through an eye 96 on an axial stem 98 of a suction cup 100. The cord C is preferably a relatively thin thread, which can break easily and without harm to the suction cup 100 or the switch 70, when the moveable element, such as a door D, on which the casing 12 is mounted, is moved away from a stationary element, to which the suction cup 100 is secured, as a wall W; and which is readily combustible by fire in contact therewith, for releasing the contact head 84 to be moved by the spring 88 into engagement with the contact 86, for actuating the horn H.

Installation of the above described device, and the device hereinbelow described, requires that the cord C be under sufficient tension that the switch spring 88 be held contracted, with the contact head 84 held out of engagement with the contact 86. In the cases of both devices, the movable element, on which the casing 12 or 12^a is mounted, need not be a pivoted or swinging element, such as a door B, but can be a rotary element, or a sliding element, such as a window sash or the like.

The device of the invention shown in FIGURES 5 through 7, and generally designated 10^a, comprises a casing 12^a, similar to the casing 12, and containing the same mechanism, on one wall of which, such as its top wall 28^a, a pivotal spring-closed switch 68^a is mounted.

The switch 68^a is similar in all respects to the switch 68, hereinabove described, except for a swivel mounting, which provides for still greater versatility in the mounting of the casing 12^a, on a movable element and relative to the stationary element, to which the suction cup on its cord C is secured. The swivel mounting comprises a U-shaped yoke 102 having a cross member 104 which is centrally traversed by a single bolt 106, which extends downwardly through an opening 108, provided in the casing top wall 28^a, and which enables adjustably rotating the switch 68^a relative to the casing 12^a, as installations of the device 10^a may require. The bolt 106 has thereon an enlarged diameter head 110 fixed to the underside of the yoke cross member 104 and bearing rotatably upon the upper surface of the casing top wall 28^a, and has a nut 112, on its lower end, which bears against the under surface of the top wall 28^a.

The yoke 102 further comprises upstanding arms 114, on the ends of its cross member 104, which are pivoted, at their upper ends, on aligned axial pins 116 which project from enlarged diameter spacer discs 118 which are fixed on the outer surfaces of opposed side walls 120 of the switch housing 72^a. The wires 95^a and 66^a lead out of the casing 12^a and through its top wall 28^a, and through the switch housing 72^a to the contact 86^a, and the buss bar 87^a therein, these wires being in slack condition to enable free rotation of and pivoting of the switch 68^a, relative to the casing 12^a.

While the mounting of the casings 12 and 12^a has been described hereinabove as being on movable elements, such as doors, and the cords secured to stationary elements, such as walls, it will be understood that, where circumstances dictate, these arrangements can be reversed.

Although there have been shown and described preferred forms of the invention, it is to be understood that the invention is not necessarily confined thereto, and

4

that any change or changes in the structure of and in the relative arrangements of components thereof are contemplated as being within the scope of the invention as defined by the claims appended hereto.

What is claimed is:

1. A fire and burglar alarm comprising a casing containing battery means in circuit with an electrical audible member, and a switch mounted externally on the casing, said switch being in circuit with the battery means and the audible member, said switch comprising a U-shaped yoke having a cross member and spaced legs extending from the cross member, said cross member being rotatably mounted on the casing, a dielectric housing positioned between said legs and pivoted to the legs, said housing having an inner end wall carrying a contact and an outer end wall formed with a central opening, a rod working through said opening and having an enlarged diameter contactor on its inner end opposed to said contact, and a coil spring circumposed on the rod and compressed between the outer end wall of the housing and said contactor, and a cord secured to the outer end of said rod.

2. In combination, a moveable element, a stationary element, a fire and burglar alarm assembly comprising an electric audible member, a source of electricity connected to one side of the audible member, and a spring-closed switch in circuit with the source and the other side of the audible member, said alarm being mounted on one of said elements, and a breakable and combustible cord secured to the other of said elements and stretched between said other element and the switch and holding the switch in open position, said switch assembly having an open front dielectric casing fixed on the related element, said housing having top and bottom walls, a back wall, and first and second side walls, a removable cover on the open front of the casing, said spring-closed switch being mounted through one of said side walls, said source being battery means having center and base contacts, said back wall having spring battery clip means on the inner side of the back wall in which said battery means is supported, said audible member being supported on said battery clip means within the casing, and swivel means mounting the spring-closed switch on a wall of the casing, said swivel means comprising a U-shaped yoke having a cross member having spaced upstanding arms thereon, a bolt secured to said cross member and securably journaled through a casing wall, pins fixed on opposed walls of the switch housing and journaled on said arms.

3. In combination, a movable element, a stationary element, a fire and burglar alarm assembly comprising an electric audible member, a source of electricity connected to one side of the audible member, and a spring-closed switch in circuit with the source and the other side of the audible member, said alarm being mounted on one of said elements, and a breakable and combustible cord secured to the other of said elements and stretched between said other element and the switch and holding the switch in open position, said switch assembly having an open front dielectric casing fixed on the related element, said housing having top and bottom walls, a back wall, and first and second side walls, a removable cover on the open front of the casing, said spring-closed switch being mounted through one of said side walls, said source being battery means having center and base contacts, said back wall having spring battery clip means on the inner side of the back wall in which said battery means is supported, said audible member being supported on said battery clip means within the casing, and swivel means mounting the spring-closed switch on a wall of the casing, said swivel means comprising a U-shaped yoke having a cross member having spaced upstanding arms thereon, a bolt secured to said cross member and securably journaled through a casing wall, pins fixed on opposed walls of the switch housing and journaled on said

arms, said casing wall being the top wall thereof, with the axis of the bolt perpendicular to the top wall.

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