Jan. 11, 1938. F. G. GIBSON 2,105,113

ELECTRIC ALARM SWITCH

Filed Jan. 21, 1936

FIG_1_

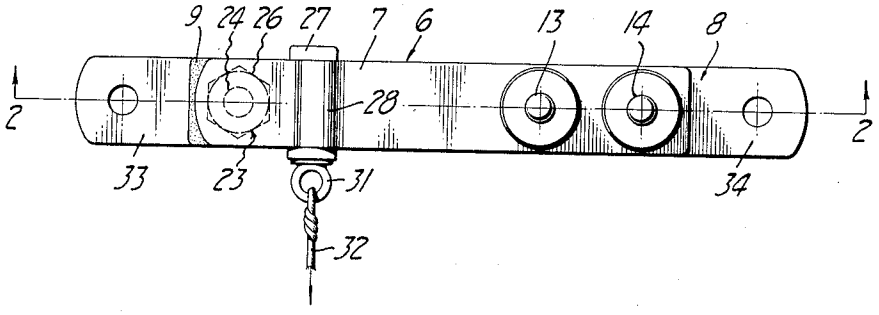


FIG_2_

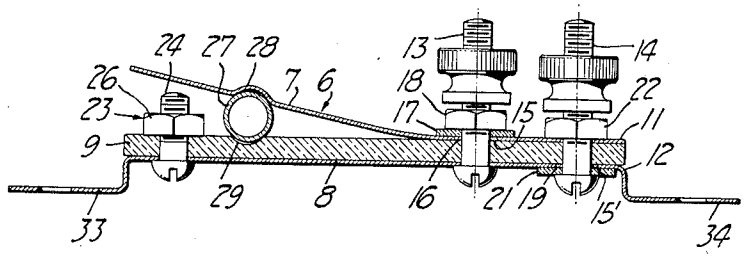
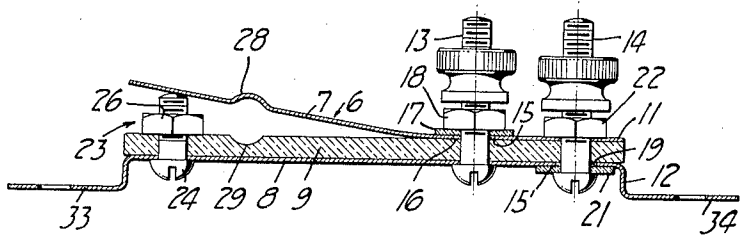


FIG_3_



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ELECTRIC ALARM SWITCH

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2 Claims. (Cl. 200—142)

The invention relates to electric switches, and more particularly to those used in connection with fire and burglar alarm circuits.

An object of the invention is to provide an electric alarm switch of the character described in a single switch unit which will serve both as a burglar alarm switch and a fire alarm switch.

Another object of the invention is to provide a switch of the character described in which several of the parts are utilized to afford both the electrical and physical properties of the switch and to otherwise arrange and design the parts to provide a simple and inexpensive construction and one which will be positive in operation and have a substantially unlimited life.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a plan view of a switch constructed in accordance with the present invention.

Figure 2 is a sectional view taken substantially on the plane of line 2—2 of Figure 1.

Figure 3 is a sectional view similar to Figure 2 but showing the switch in closed position.

With reference more particularly to the drawing, the electric switch 6 of the present invention is arranged for use in substantially any alarm or signalling circuit including, in series, an electric alarm or signal means, a source of electric potential, and the switch. More specifically the switch comprises a pair of flat metallic strips 7 and 8 which are separated by an insulation member 9 and physically secured together and with the member 9 adjacent the ends 11 and 12 of the strips by means of a pair of terminals 13 and 14. As will be clear from Figure 2 and 3 the terminal 13 contacts the strip 8 and is insulated from the strip 7 by means of an insulation washer 15 fitting in an enlarged opening 16 in the strip 7 and an auxiliary insulation washer 17 against which a base nut 18 of the terminal bears. On the other hand the terminal 14 is insulated from the strip 8 by means of an insulation washer 15' engaging in an enlarged opening 19 in the strip and an insulation washer 21, while electrical contact is made with the strip 11 by means of a base nut 22 of the terminal.

Extending through the strip 8 and the insulation member 9 adjacent the opposite end of the switch is a contact element 23 comprised of a screw 24 and a nut 26 and which serves both to secure the members 8 and 9 together at this point and as a switch contact point for the strip 7. Normally the strip 7 is resiliently flexed outwardly from engagement with the element 23 by means of a fusible member 27 mounted between the insulation member 9 and the strip and which upon reaching a certain temperature will fuse and permit the resilient movement of the strip 7 into engagement with the element 23, thus closing an associated electric circuit through the switch in case of fire.

In addition to its use in a fire alarm circuit, the switch is especially arranged for joint use also as a burglar alarm by providing for the connection of the cartridge 27 to doors and windows or the like and the removal of the cartridge bodily from its aforesaid position incident to an unauthorized opening of these means of entrance. To facilitate the withdrawal of the cartridge from its position between the strip 7 and the insulation member 9, the latter are provided with opposed transversely extending recessed guide portions 28 and 29 for permitting the forcible withdrawal of the cartridge laterally from between the strip 7 and the insulation member 9 while at the same time holding the cartridge against longitudinal displacement. The cartridge itself is preferably provided at an end with an eye 31 for the attachment of a cord 32 which may in turn be secured to doors or windows or the like as aforesaid. It will thus be clear that with the switch connected in an alarm or signal circuit of the character previously indicated, the circuit will be energized due either to the presence of fire or to an unauthorized opening of windows or doors or the like to which the switch cartridge is fastened.

Preferably the major length of the strip 8 intermediate its ends thereof is raised, as by means of depending feet portions 33 and 34, and the latter perforated to facilitate attachment to a wall or the like with the intermediate portion spaced from a wall a distance to also space the heads of the terminals 13 and 14 and the contact element 23.

The fusible element or cartridge 31 may be formed of any suitable material, the cartridge here illustrated being a small tubular length of nitro-cellulose or similar material. This substance, besides being responsive to heat, is an electric insulation. If desired, a suitable wax

or low melting temperature metal may be used.

I claim:

1. An electric alarm switch comprising, a pair of flat elongated metallic strips, an insulation separator therebetween, means for securing said strips and separator together and in substantially parallel relation adjacent one end of said strips, contact means carried by one of said strips and extended through said separator to an outwardly fixed position of said other strip, said last named strip and separator having aligned cross grooves, and a fusible element removably mounted in said grooves and for holding said last named strip spaced from said contact means.

2. An electric alarm switch comprising, an elongated metallic strip having an offset intermediate portion to space the ends from said intermediate portion for mounting, an elongated insulation member mounted on said intermediate portion, a contact element securing said strip and member together and extended through the latter from said strip to and spaced from the opposite side of said insulation member, a second metallic strip mounted on said insulation member at said last mentioned side thereof for engagement with said contact element, electric conductor terminals securing said strips and member together and one terminal making electric contact with one strip and the other terminal with the other strip, and a fusible element removably mounted between said insulation member and second named strip to hold the latter resiliently flexed from said contact element.

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