Dec. 27, 1966 R. T. WINTERRINGER 3,295,123

BURGLAR ALARM

Filed Dec. 3, 1964

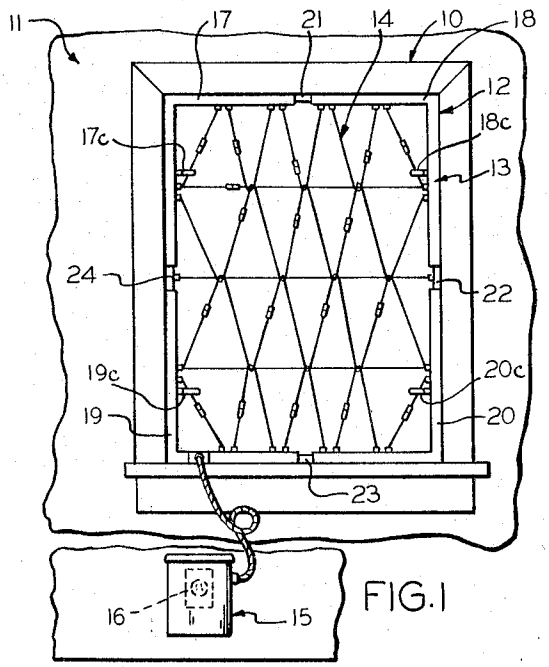


FIG. 1

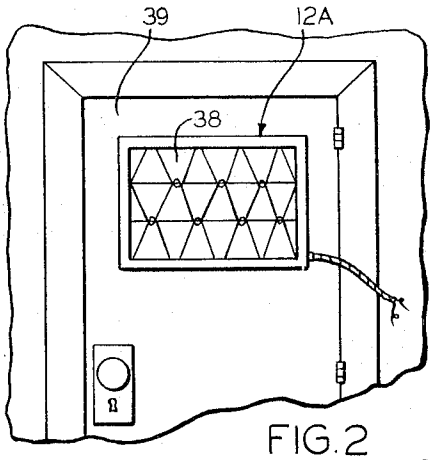


FIG. 2

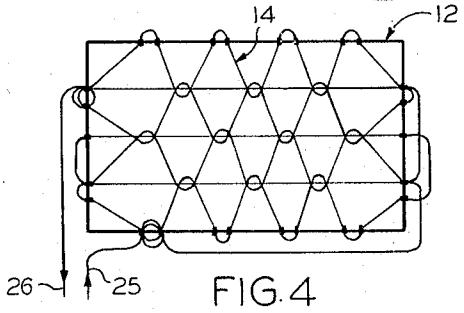


FIG. 4

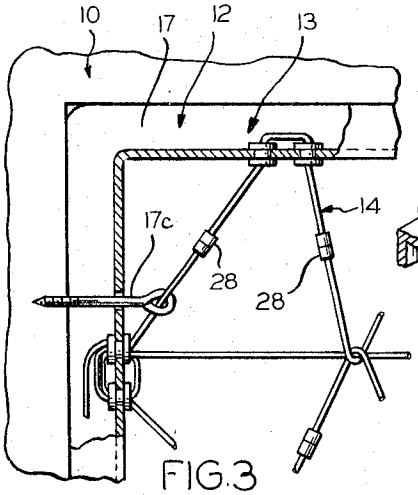


FIG. 3

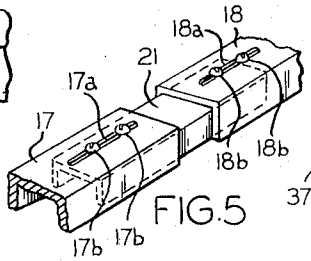


FIG. 5

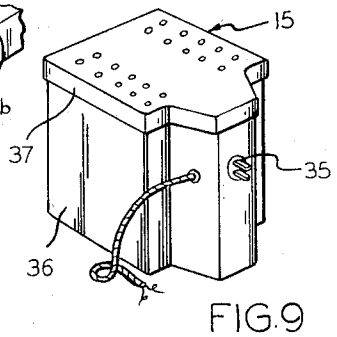


FIG. 9

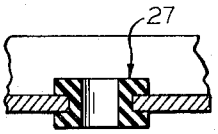


FIG. 6

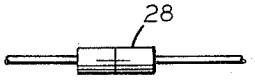


FIG. 7

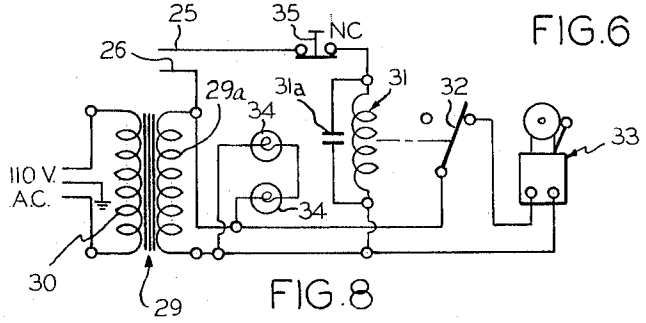


FIG. 8

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BURGLAR ALARM

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This invention relates in general to a burglar alarm, and more particularly to a burglar alarm for use in homes and apartments, although other uses and purposes may be apparent to one skilled in the art.

The burglar alarm of the present invention includes a generally rectangular frame adjustable to fit various sizes of windows and doors. A wire network is supported by the frame to block a door or window opening, and the wire network is connected to an alarm circuit, whereby breaking of the network triggers the alarm circuit. The frame is portable and can easily be mounted in or removed from a window. Means is provided to prevent removal of the frame from a window when the alarm circuit is set which includes eyebolt means anchoring the frame and through which wires extend and must be broken before removal.

It is an object of this invention to provide a burglar alarm that is specially applicable for use in homes and apartments and which may be easily and economically manufactured, may be easily and quickly assembled and installed by the home owner in a "do-it-yourself" fashion, and therefore may be easily and inexpensively repaired if necessary, is operable on line voltage but requires low power and is therefore inexpensive to operate, usable in any opening such as a window or door to prevent the entrance of unwanted intruders, and utilizes a transformer so that the circuitry operates on low voltage that cannot injure children or adults.

A further object of this invention is in the provision of a burglar alarm having a loop of wire in a protective circuit that is mounted in an adjustable frame which can be secured in a window sill or on a door and which cannot be removed by an intruder without setting off the alarm, and when the frame is mounted on a door, the door could also be equipped with a type of door switch operable to set off the alarm if the door is opened.

A still further object of this invention is to provide a burglar alarm having a framework of wires that can be mounted over a window in a wall or a window on a door and connectable to a single unit that may be quickly and easily mounted in a wall outlet provided nearby.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheet of drawing, wherein like reference numerals refer to like parts, in which:

FIG. 1 is a front elevational view of a fragmentary section of a building showing the frame having the protective wire in place on a window and showing the alarm unit mounted in a wall plug;

FIG. 2 is an elevational view that is partially fragmentary of a door in a building having the frame and wire arrangement of the present invention mounted over a window in the door;

FIG. 3 is a greatly enlarged fragmentary and somewhat sectional view of one corner of the framework holding the protective wire network;

FIG. 4 is a schematic view showing the arrangement of the wire network in a frame although other arrangements may be employed;

FIG. 5 is an enlarged perspective view and partially fragmentary of a portion of the frame holding the wire network and showing the adjustable sections;

FIG. 6 is a greatly enlarged fragmentary and sectional

view taken through the frame and showing the manner of mounting a rubber or other type of insulating grommet in the frame through which the wires in the wire network extend;

FIG. 7 is an enlarged front elevational view of a connector employed in the wire network of the frame for mounting over an opening;

FIG. 8 is an electrical schematic diagram of the circuitry for the alarm of the present invention; and

FIG. 9 is a perspective view of the unit which houses the elements in the alarm and protective circuit shown in FIG. 8.

Referring now to the drawings and particularly to FIG. 1, the burglar alarm of the present invention is shown as applied to a window **10** of a building **11**, wherein the burglar alarm includes a protective unit **12** having a frame **13** and a wire network **14**, and a wall plug unit **15** that is suitably mounted in a wall plug **16** that is located at least an arm's length distance from the window.

The frame **13** includes four right-angle, channel-shaped in cross-section members **17**, **18**, **19** and **20** adjustably interconnected by channel-shaped bars **21**, **22**, **23**, and **24** as particularly seen in FIG. 5. The corner angle bars **17** and **18** are appropriately provided with slots **17***a* and **18***a* for receiving suitable fasteners **17***b* and **18***b* that are connected to the intermediate bar **21** so that the corner bars **17** and **18** may be adjustably mounted toward or away from each other depending upon the dimensions of the window frame within which the frame **13** is to be mounted. Each corner bar **17**, **18**, **19** and **20** is fastened to the window frame by means of eyebolts **17***c*, **18***c*, **19***c* and **20***c*, respectively. As particularly noted in FIG. 3, a wire from the wire network **14** passes through the eyes of the eyebolts so that it is not possible to remove the eyebolts without separating or severing the wire that passes through the eyes thereof, thus preventing the removal of the frame **13** from the window sill.

The wire network **14** is defined by a single continuous conductor that is interwoven through the frame **13** and which includes inlet and outlet wires **25** and **26**, FIG. 4. The inlet and outlet wires **25** and **26** lead to the wall plug unit **15**. Thus a loop of continuous wire is mounted in the frame **13**, wherein separation of any part of the wire causes actuation of the burglar alarm.

An example of the manner in which the wire may be threaded through the frame **13** and to form a network having small openings is shown in FIG. 4. Thus, it is not possible for any person to pass through the wire network **14** without first cutting it and such would set off the alarm.

The frame **13** is preferably made of metal, although it may be fabricated of plastic, if so desired. Insulating grommets **27** are mounted in the frame **13** through which the wire network may be arranged thereby preventing contact between the wire network and the frame and also protecting the insulation on the wire network against rough surfaces. The grommet **27** may be of rubber, plastic or any other suitable insulating material. Any number of connectors **28** may be provided in the wire network to facilitate the stringing of the wire through the frame members.

The inlet and outlet wires **25** and **26** are connected to the wall plug unit **15** and the protective circuit of the alarm. This protective circuit includes a source of power emanating from the secondary winding **29***a* of the transformer **29**. The primary winding **30** of the transformer may be connected to line voltage such as 110 volts A.C. The secondary winding **29***a* is such as to reduce the line voltage to approximately 6 volts so that the general circuitry of the alarm operates on extremely low voltage and voltage which cannot harm an adult or a child under

normal circumstances. The protective circuit also includes a relay **31** operating contacts **32** that are arranged in the alarm circuit. The alarm circuit also is connected to the secondary winding **29***a* of the transformer **29** and has therein an ordinary door bell or other signal device **33**. A suitable condenser **31***a* is placed across the relay coil to reduce hum in the relay **31** when it is energized.

A pair of regular flashlight lamps **34** are connected in series and across the secondary winding **29***a* of the transformer to indicate when the power is on for the unit and also to function as a night light in a room where desired.

The primary winding **30** of the transformer is suitably connected to a male plug **35** that extends from the wall plug unit **15** and so it permits the mounting of the wall plug unit in a wall outlet. In setting the circuit, it is only necessary after properly mounting the wire network on the frame to insert the wall plug unit **15** in the wall plug. This will energize the relay **31** if the protective circuit is closed and if the wire network is appropriately mounted in the frame **13**. Upon energization of the relay **31**, the contacts **32** will open the alarm circuit. Also the lamps **34** will be energized to indicate that the power is on. Upon severing of the loop of continuous wire extending through the frame **13**, the relay **31** will fall out and permit closing of the contacts **32** and the alarm circuit to energize the alarm **33**. As shown, the alarm **33** is an ordinary door bell that is operable off the low voltage from the transformer secondary winding **28**. Further, the relay **31** is operable by the low voltage issuing from the secondary winding **29***a* of the transformer **29**. If the relay coil should fail, the relay will fall out and energize the alarm **33**, thus providing a fail safe arrangement.

A test button **35** is provided in the protective circuit and is normally closed. After the wall plug unit **15** is mounted in a wall plug, the operation of the alarm can be tested by pushing of the test button **35**.

The window protective unit **12** is mounted on the room side of the window and thereby offers protection when the window is closed or open, but especially offers protection when the window is open during warm weather and wherein only a screen would normally be provided.

The wall plug unit **15** may have a plastic or metal case and it includes generally a body **36** having a cover **37** thereon and removable for servicing of the component parts shown schematically in FIG. 8 and all of which would be mounted in the body **36**. And as already explained, if necessary, any of the component parts could be replaced inexpensively by the home owner. Similarly, if any of the wires in the wire network **14** are cut or damaged, they can be easily repaired or replaced by the home owner.

A protective wire network unit **12A** is shown in place over a window **38** of a door **39** in a building. Thus, it would not be possible to enter through the window **38** even if same were removed without severing the wire network in the protective frame **12A** and setting off the alarm. The protective frame unit **12A** may be similar to the protective unit **12**, but it is preferable that the

channel-shaped frame have the open side facing the door, while the open side in the frame in the embodiment of FIG. 1 faces the window sill. Further, it can be appreciated that one or more door units could be used with one or more window units, where both woud be connected to a single wall plug unit **15**.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention, but it is understood that this application is to be limited only by the scope of the appended claims.

The invention is hereby claimed as follows:

1. A burglar alarm comprising, an alarm circuit and a protective circuit, said protective circuit including a protective unit serially connected to a relay and the secondary of a transformer, the transformer having a primary connected to line voltage, said protective unit having a frame supporting a network of wire over an opening in a building, said alarm circuit including an alarm serially connected with a set of contacts operated by said relay and said secondary, eyebolts for securing the frame to the building wherein the wire in the frame is strung through the eyes of the eyebolts after they are mounted on the building to prevent removal of the eyebolts without severing the wire, and connectors along at least the wire that is strung through the eyes of the eyebolts to facilitate stringing of the wire through the eyes of the eyebolts.

2. A burglar alarm comprising, an alarm circuit and a protective circuit, said protective circuit including a protective unit serially connected to a relay and the secondary of a transformer, the transformer having a primary connected to line voltage, said protective unit including a rectangular frame including diagonally opposed right angle corner sections having slot and fastener arrangements adjustably interconnecting same for adjusting the width and height of said frame, said frame adapted to be mounted over an opening in a building and a network of insulated wire carried by said frame and being strung to define a series of small openings such that a human being could not pass through without severing the wire, said network of wire including start and finish leads connected serially in the protective circuit, and said alarm circuit including an alarm serially connected with a set of contacts operated by said relay and said secondary.

3. The combination as defined in claim **2**, and a lamp connected in parallel with said secondary to indicate the "on" condition of the burglar alarm.

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