No. 704,246. Patented July 8, 1902.

P. W. DUNNE.

BURGLAR ALARM.

(Application filed Mar. 30, 1901.)

(No Model.) 2 Sheets—Sheet 1.

FIG 1.

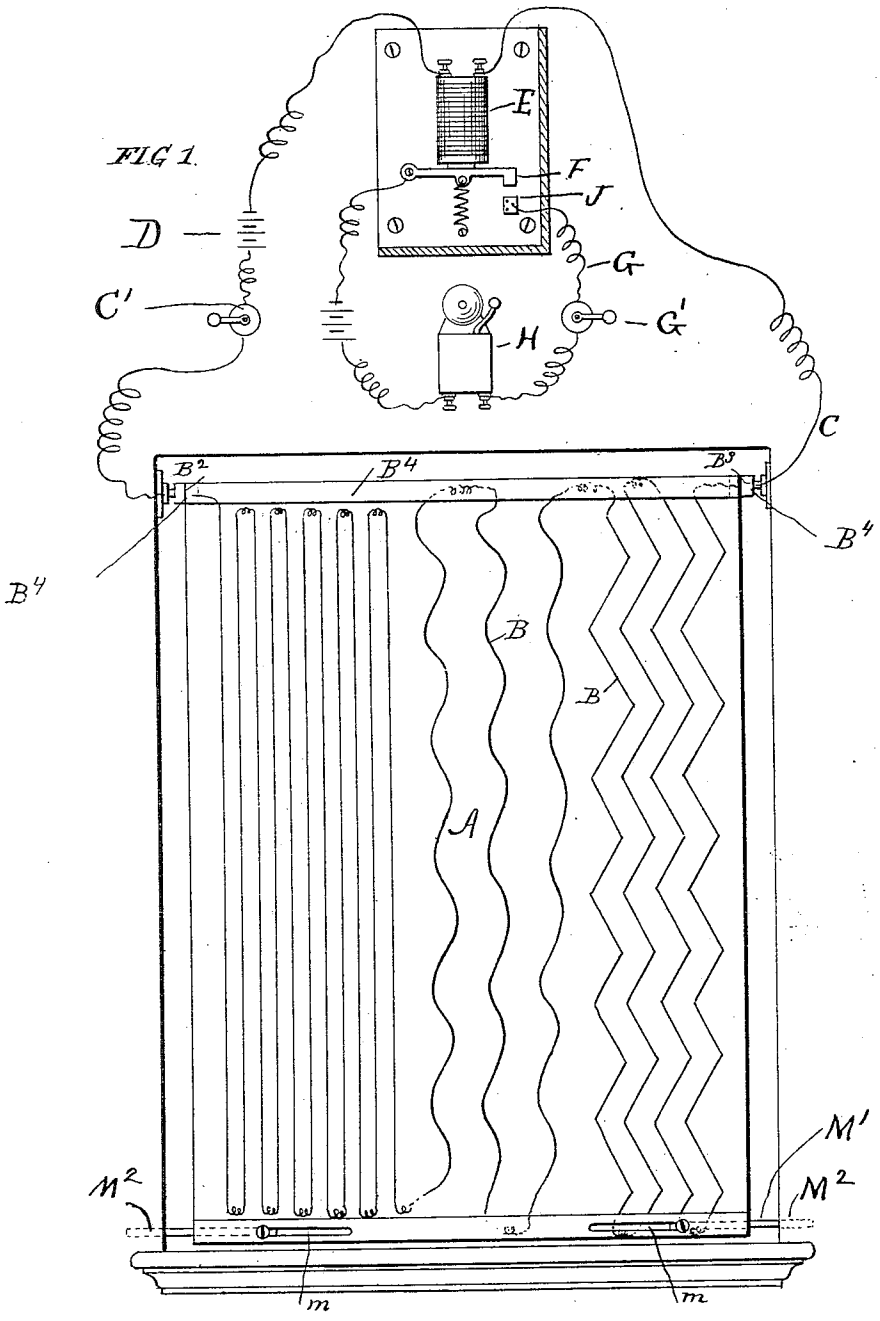


FIG. 2.

WITNESSES:
F. B. Townsend
H. M. Munday

INVENTOR
Patrick William Dunne.
BY Munday, Evarts & Adcock,
ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 704,246. Patented July 8, 1902.

P. W. DUNNE.

BURGLAR ALARM.

(Application filed Mar. 30, 1901.)

(No Model.) 2 Sheets—Sheet 2.

FIG 3.

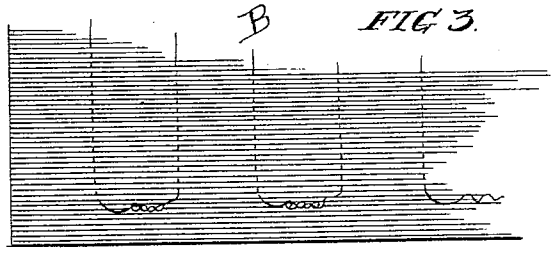


FIG 4

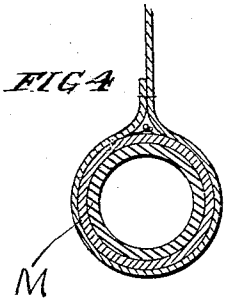


FIG. 5.

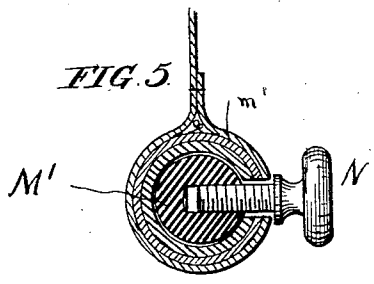


FIG. 6.

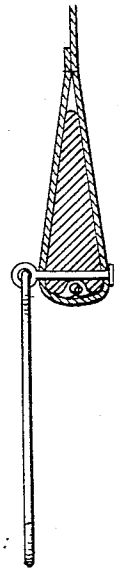
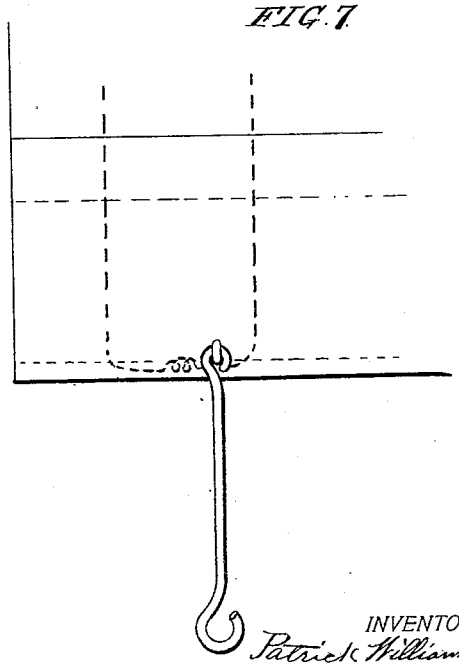


FIG. 7.



WITNESSES:

F. B. Townsend.

H. W. Munday

INVENTOR.

Patrick William Dunne

BY

Munday, Evarts & Adcock.

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PATRICK W. DUNNE, OF RIVER FORREST, ILLINOIS.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 704,246, dated July 8, 1902.

Application filed March 30, 1901. Serial No. 53,694. (No model.)

To all whom it may concern:

Be it known that I, PATRICK WILLIAM DUNNE, a citizen of the United States, residing in River Forrest, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Burglar-Alarms, of which the following is a specification.

This invention relates to improvements in burglar-alarms, and is specially intended for the protection of window-openings by applying the burglar-alarm to the window-curtain or roller-shade; and the invention consists in weaving into the fabric of which the shade or curtain is made a multiplicity of metallic conducting-wires of such size and flexibility that they do not interfere with the flexibility of the curtain and are concealed in the body of the fabric. These wires may form a part of the warp-threads of the fabric, and said fabric, being made by the manufacturer in bolts of a number of yards, may be cut into lengths suitable for use as shades, and the ends of the wires being thus exposed by fraying out the fabric, if necessary, by removing a portion of the woof at the ends or drawing the wire out. The ends of the wires are then connected together, so that all of the wire in the curtain length of fabric shall constitute a continuous electric conductor. The opposite ends of this continuous conductor are then connected through the support of the curtain—that is to say, by the axes of the shade-roller—to the terminals of an electric circuit, which includes a battery, an electromagnet, and a switch or opening and closing key. This electric circuit when the burglar-alarm is in condition for operation stands normally closed. A second electric circuit, controlled by the magnet in the first circuit, is provided with an electric alarm-bell. This latter circuit stands normally open, being held open by the electromagnet of the first circuit, so that when the first circuit is broken the second circuit is thereby closed, which rings the bell continuously until turned off. Consequently whenever it happens that the conductor-wire of the first circuit is broken at any point the bell will ring, and the alarm thus be given. The construction is such that when the window-curtain is pulled down and fastened an entrance through the window cannot be made without cutting, breaking, or destroying in some manner this shade fabric filled with conductor-wire, a break of which at any point will sound the alarm.

The nature of the invention will more fully appear from the subjoined description and claims, taken in connection with the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is an elevation, partly diagrammatic, of the improved burglar-alarm window-curtain and the circuits. Fig. 2 is a cross-section of the curtain fabric. Fig. 3 is a plan view of a portion of said fabric upon a somewhat larger scale. Figs. 4 and 5 are cross-sections of the bottom rod of said curtain upon a still larger scale, and Figs. 6 and 7 are respectively a sectional and front view of a modified form of bottom rod and fastening.

In said drawings, A represents the curtain material or fabric, which may be made of cloth of any kind used for curtains, or it may be made of woven splints, such as are sometimes used for shade-fixtures. The only peculiarity necessary in this connection is that the fabric shall be supplied with a multitude of wires or convolutions of wire forming one continuous conductor. In practice I make this curtain fabric by substituting in the process of weaving for some of the warp-threads wires which should preferably be fine copper wire, so that it shall be very light and very flexible, and the fabric is woven in any convenient length to suit the manufacturer, being afterward cut up into shade lengths to suit the length of the window, and afterward the ends of the wires being drawn out from the fabric at each end of the shade are connected together, so that they will form one continuous electric conductor, with its terminals at the two upper corners of the shade. Where it is known in advance what the length of the shade is to be, the manufacturer can conveniently weave the fabric shade after shade by omitting the woof for a space at the end of each shade length. This of course cannot be done where the length of the shade is not predetermined, and in that case the fabric must be cut to shade lengths and the woof removed by unraveling at the ends or, if not removed, the wires withdrawn, as before suggested, and in any case all of

the ends of the wires united, as before described, to form a continuous electric conductor in the body of the fabric, with its terminals at the upper corners of the shade. The wires embedded in the body of the fabric are shown at B, and they may run through the fabric either in straight lines, as shown in one part in Fig. 1, or in wavy or in zigzag lines, as desired, at the will of the weaver and as may be preferred. I prefer that they run in straight lines, as this strengthens the fabric.

B′ shows the joint or connection where the ends of the adjacent wires at the top and bottom of the shade are electrically united by twisting them together firmly into good contact, and B^2 B^3 are the terminals of this continuous conductor. These terminals are united to the metallic parts of the shade-roller B^4, to which are connected the terminals of the electric circuit C, which includes the battery or electromotive power D and the electric magnet E.

F is the armature of the magnet E. This armature F is included in a second electric circuit G, which includes an alarm-bell H. The terminals of this second circuit are the armature F and contact J. So long as the electric circuit C remains unbroken the armature F is held from the contact J and the second circuit G remains unbroken; but so soon as the circuit C is broken from any cause and the electric magnet D energized the armature falls into contact with J and the circuit G is closed and the bell begins to ring. The circuit C is provided with a breaking-switch C′, and the circuit G is provided with a breaking-switch G′. The purpose of the breaking-switch G′ in the second circuit is to stop the ringing of the bell, and the purpose of the breaking-switch C′ in the circuit C is to put the burglar-alarm on or off—that is to say, to save the battery power during the daytime this switch C′ will be open, and at night when the burglar-alarm will be needed this switch will be closed.

For fastening the bottom of the curtain to the window, so that the curtain cannot be raised without destroying the wires, I prefer to employ a hollow tube M, provided with a sliding bolt M′, which can be shot out into a socket M^2 at each side of the window. The tube M is slotted at *m*, and a screw-handle N passes through this slot into the bolt M′, so that when the bolt is shot by turning this screw it will be locked or clamped. The curtain fabric is wrapped around this tube and stitched in place in the usual way. I prefer to cover the tube with a cloth or rubber covering *m*′. It will be seen that if a burglar should attempt to tear the locked rod M from its fastenings this would almost certainly break the slender conductor in some place, and any attempt to cut the slide would result also in severing said conductor, and any effort to remove the slide from the window by lifting up the upper roller or removing it from its sockets would also break the connection, so that any of these efforts would result in giving the alarm.

In the modification shown at Figs. 6 and 7 instead of the tube M and bolt M′ an ordinary wooden slat is employed sewed into the lower margin of the curtain, and hooks are secured to it by through-bolts. These hooks being fastened below the window, an attempt to break the shade by pulling up on the slat will almost certainly rupture the conductor-wire and give the alarm.

The invention thus described forms an easily-made, cheap, and effective burglar-alarm for windows, which have been openings heretofore thought difficult to protect by burglar-alarms.

I claim—

1. The combination of the curtain made of fabric whereof a portion of the warp-threads are made of wire, said wire warp-threads being united together to form a continuous electric conductor; the shade-roller with metallic axes and fixtures, connected to said continuous curtain-wire; the electric circuit including an electromagnet which controls a secondary circuit including an alarm-bell, substantially as specified.

2. The combination of the curtain made of fabric whereof a portion of the warp-threads are made of wire, said wire warp-threads being united together to form a continuous electric conductor; the shade-roller with metallic axes and fixtures, connected to said continuous curtain-wire; the electric circuit including an electromagnet which controls a secondary circuit including an alarm-bell, and means at the bottom of the curtain for fastening it down to the window or frame, substantially as specified.

3. The combination of the curtain made of fabric whereof a portion of the warp-threads are made of wire, said wire warp-threads being united together to form a continuous electric conductor; the shade-roller with metallic axes and fixtures, connected to said continuous curtain-wire; the electric circuit including an electromagnet which controls a secondary circuit including an alarm-bell, and means at the bottom of the curtain for fastening it down to the window or frame which consists of a hollow tube provided with sliding bolts one at each end setting into sockets in the window-framing, substantially as specified.

PATRICK W. DUNNE.

Witnesses:
H. M. MUNDAY,
EDWARD S. EVARTS.