

Sept. 8, 1942.

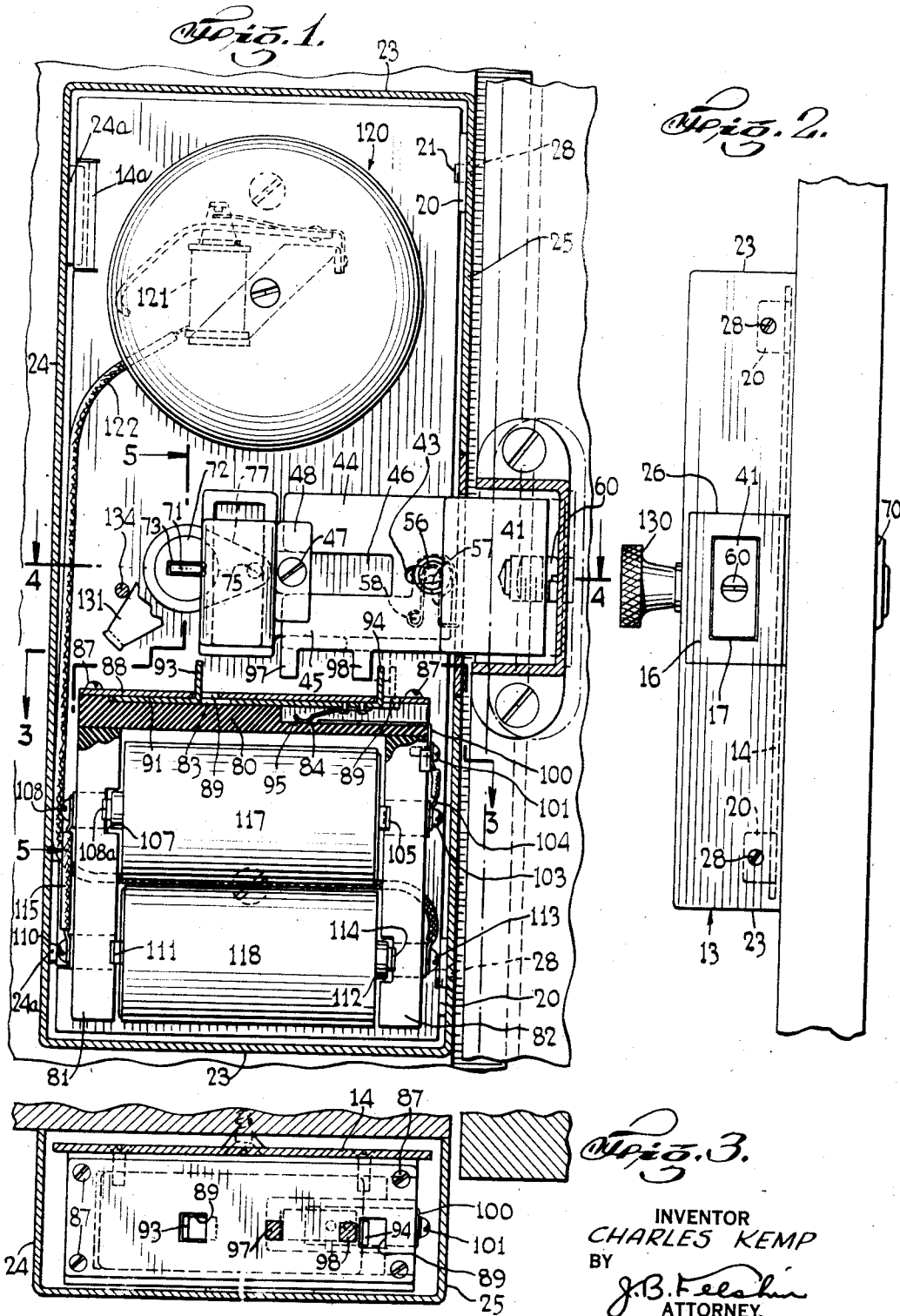
C. KEMP

2,295,482

BURGLAR ALARM LOCK

Filed June 19, 1940

2 Sheets-Sheet 1



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Fig. 4

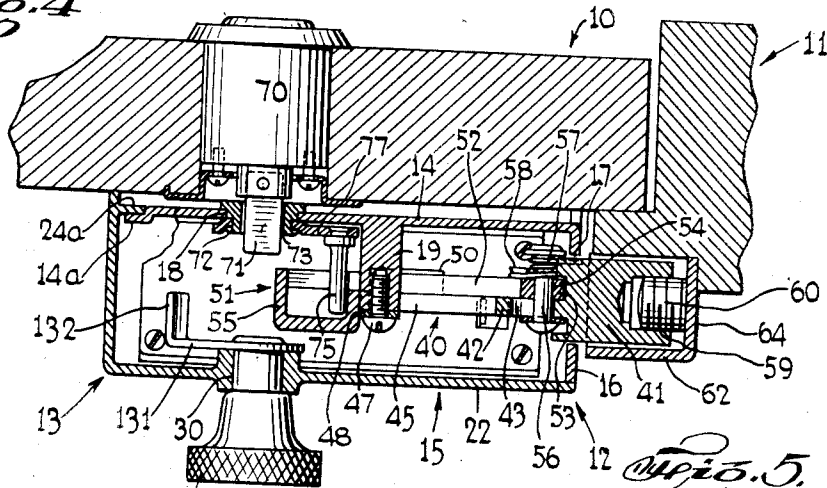


Fig. 7

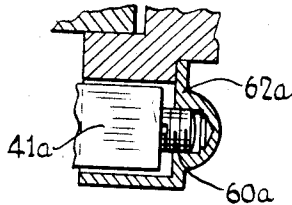


Fig. 5

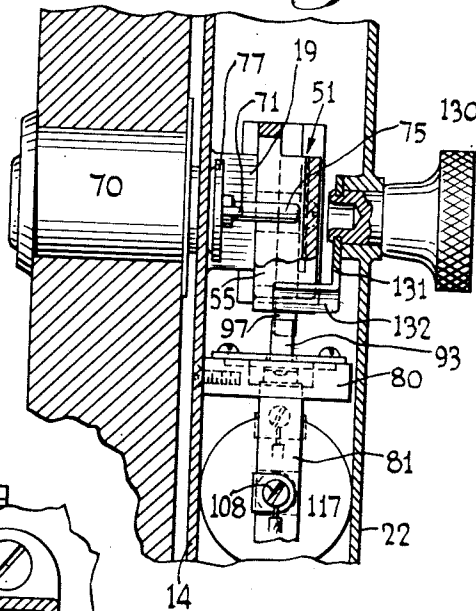
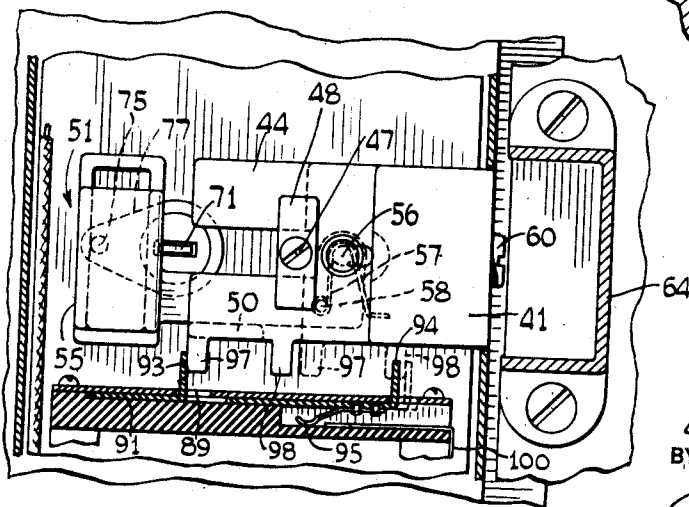


Fig. 6



INVENTOR
CHARLES KEMP
BY
J.B. Felakin
ATTORNEY

UNITED STATES PATENT OFFICE

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BURGLAR ALARM LOCK

Charles Kemp, New York, N. Y.

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7 Claims. (Cl. 177-314)

This invention relates to burglar alarm locks.

An object of this invention is to provide a lock of the character described adapted to be attached to the inner side of a door to be locked or unlocked by means of a key from the outside of the door, means being provided to cause an alarm should the door be jimmied, while the door is locked, the ringing being continuous once it starts even if the jimmying ceases, until the door is unlocked by insertion of proper key into the key cylinder.

It is well known that burglars sometimes enter a store or apartment through a window, and then try to get out by the door. In accordance with the present invention, the lock cannot be unlocked from the inside. However, a knob is placed on the casing on the inside of the door simulating a bolt throwing and retracting knob. This knob does not have any means to throw or retract the bolt, but upon being rotated from the inside, when the door is locked, will cause an alarm. Means is further provided, in accordance with the invention, to prevent actuation of the alarm by means of the knob when the lock is open, so that during the day, the alarm cannot be made by someone accidentally turning the knob.

A further object of this invention is to provide a strong, rugged, durable and compact burglar alarm lock of the character described which shall be relatively inexpensive to manufacture, simple and positive in action, and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims:

In the accompanying drawings, in which is shown various possible illustrative embodiments of this invention,

Fig. 1 is a front, elevational, cross-sectional view of a burglar alarm lock embodying the invention, taken inside of the lock casing, and showing the same in locked condition in full lines and illustrating the switch closing position of the alarm circuit when the door is jimmied;

Fig. 2 is an end elevational view of the lock with the keeper removed;

Fig. 3 is a cross-sectional view taken on line 3-3 of Fig. 1;

Fig. 4 is a cross-sectional view taken on line 4-4 of Fig. 1;

Fig. 5 is a cross-sectional view taken on line 5-5 of Fig. 1;

Fig. 6 is a partial view similar to Fig. 1, but showing the bolt in retracted position; and

Fig. 7 is a horizontal, cross-sectional view illustrating a modified construction of the adjusting mechanism for the throw of the bolt.

Referring now in detail to the drawings, 10 designates a door, 11 a door jamb, and 12 a burglar alarm lock embodying the invention for locking the door to the door jamb. The lock 12 comprises a casing 13 attached to the door 10. The casing 13 comprises a back plate 14, and a cover 15. The back plate 14 may be attached to the door 10 by means of any suitable screws or other fastening means.

Extending forwardly from the back plate, at right angles thereto, is a wall 16 formed with an opening 17 for a bolt, as will appear hereinafter. The plate 14 is furthermore formed with an opening 18, and provided with a forwardly extending post or stud 19, for the purposes hereinafter appearing. Extending from the edge of the plate 14, adjacent the door jamb 11, are a pair of spaced ears 20 formed with screw threaded openings 21, and located in a plane inward of the plane of wall 16.

The cover 15 has a front wall 22, top and bottom walls 23 and side walls 24 and 25. The side wall 25 is in the plane of the wall 16, and is formed with a cut-out 26 receiving said wall. The ears 20 of plate 14, contact the inner surface of wall 25 and are attached thereto by screws 28 passing through openings in said wall and through said screw threaded openings 21.

Wall 24 of the cover has inwardly projecting lugs 24a engaged by offset lugs or portions 14a of the plate 14. The cover is thus attached to the plate 14 by means of the interengaging lugs 24a, 14a, and attached ears 20. The front wall 22 of the cover is formed with an opening 30, for the purpose hereinafter appearing, in alignment with opening 18 of plate 14.

Slidably mounted within the casing 13 is a bolt 40 having a head 41 slidably received in opening 17 of wall 16. Extending from the head 41, is a vertical, thinned wall 42 formed with a horizontal slot 43. Extending from the walls 24, 42 is a pair of spaced, parallel arms 44 and 45 forming a slot 46 therebetween slidably receiving the post 19. Attached to the outer end of the post 19, as by screw 47, is a plate 48 engaging the arms 44 and 45 to hold the same in their plane of sliding

movement. Extending from the lower edge of arm 45, toward the plate 14, is a shelf or flange 50, for the purpose hereinafter appearing.

Slidably mounted on said flange 50, is a bolt actuating member 51 having an arm 52 contacting the upper side of said flange and also the inner surface of arm 45 of the bolt 40. Extending upwardly from one end of arm 52, is an ear 53 formed with an opening 54 registering with the slot 43. Extending upwardly from the opposite end of arm 52 is a box 55, for the purpose hereinafter appearing. Extending through the opening 54 and slot 43, is a transverse pin 56.

It will now be noted that the bolt 40 has a lost motion connection with member 51.

On pin 56 is a torsion spring 57, one end of which is attached to a pin 58 on arm 52, and the other end of which engages the bolt head 41. The spring 57 normally tends to project the bolt 40 relative to member 51. The outer end of the bolt head 41 is formed with a screw socket 59 to receive screw 60, adapted to project beyond the head of the bolt.

Fixed to the door jamb 11 is a keeper 62 adapted to receive the bolt head 41 when the bolt is projected. The screw 60 strikes the wall 64 of the keeper to limit outward movement of the bolt 40. The throw of the bolt may be adjusted by screw 60.

Key actuated means is provided for projecting the bolt 40. To this end, the door 10 is formed with an opening 19a registering with the opening 13 and receiving a key cylinder 70 fixed to the door. Extending from the cylinder 70 is the usual strip 71. Rotatably mounted in opening 18 of plate 14 is a ferrule 72 formed with a slot 73 to receive the strip 71.

It will now be understood that when a key is inserted into the key cylinder 70 and turned, the strip 71 will be rotated to rotate the ferrule 72. Fixed to the ferrule 72 is an arm 74 to which there is fixed a pin 75 projecting into the box portion 55 of member 51. Upon turning the key, member 51 will be reciprocated to either project the bolt or retract the bolt.

After the bolt is projected to lock the door, jimmying of the door will permit the bolt to move further relative to the casing 13, by reason of the pin and slot connections 56, 43, and spring 57.

Means is provided to actuate an alarm or signal when the door is jimmied, after the door is locked. To this end, there is fixed to plate 14, a horizontal plate 80 of insulating material, and fixed to the outer ends of plate 80, are parallel, downwardly extending plates 81 and 82, likewise made of insulating material. Plate 80 is formed in its upper surface with a groove 83. At one end, the groove is enlarged by a recess 84. Fixed to the top of plate 80, as by screws 87, is a metal plate 88 covering the groove 83 and recess 84. Plate 88 is formed with a pair of slots 89. Slidably mounted within groove 83 and disposed below plate 88, is a plate 91 made of conducting material and having a pair of fingers 93, 94 projecting upwardly through the slots 89. Attached to the underside of plate 91 is a spring finger 95 projecting down into the recess 84.

On arm 45 of bolt 40 are a pair of downwardly projecting spaced lugs 97, 98. When the bolt is projected, lug 98 is disposed adjacent the finger 94. If the door is thereafter jimmied, the bolt will move further to the right, looking at the drawing, to cause lug 98 to engage finger 94 and move plate 91 to the right. Attached to the bottom of recess 84 is a conducting strip 100.

The strip 100 is attached to plate 82 by a screw 101. On plate 82 is a terminal 103 connected by wire 104 to the screw 101. The terminal 103 passes through the plate 82, and attached to the inner end thereof, is a spring finger 105.

Plate 81 is formed, opposite to the spring finger 85, with a recess 107. Fixed to said plate 81 is a terminal 108, to the inner end of which is fixed a spring finger 108a disposed within the recess 107. Fixed to plate 81 is another terminal 110 passing through said plate, and attached to the inner end of said terminal, is a spring finger 111. Plate 82 is formed, opposite to the spring finger 111, with a recess 112. Fixed to plate 82 is a terminal 113, to the inner end of which, is a spring finger 114 disposed within the recess 112. The terminals 108 and 110 are interconnected by a wire or conductor 115.

Between the plates 81 and 82 are a pair of dry cells or batteries 117 and 118. The anode of battery 117 is received within the recess 107 and engages the spring finger 108. The bottom of the battery 117 contacts the spring finger 105.

The battery 118 is disposed oppositely to the battery 117, and the anode thereof is within recess 112 contacting the spring finger 114, whereas, the bottom thereof contacts the spring finger 111. The batteries cannot be put in wrong because the anodes must fit into the recesses.

Within the upper end of the casing 13, is a bell 120 of any suitable construction, provided with an electro-magnet 121. The electro-magnet 121 may be fixed to plate 14 in any suitable manner, and is connected by wire 122 to the terminal 113. The other side of the electro-magnet is grounded.

The operation of the device will now be described:

When the door is locked by projection of the bolt with the key, the alarm does not sound because lug 98 has not turned plate 91 sufficiently for the spring finger 95 to engage the strip 100. However, should the door be jimmied, lug 98 pushes the plate 91 sufficiently for the spring finger 95 to engage the strip 100, thus connecting the batteries to ground and causing the bell to ring. If the jimmy is removed from the door, and the bolt is retracted somewhat, the bell keeps on ringing because the plate 91 is not retracted. When the bolt is retracted by opening of the door with the key, lug 97 contacts finger 93 to retract the plate 91 sufficiently for the finger 95 to move off the strip 100 and stop ringing of the bell.

It often happens that burglars will enter an apartment or store through a window and then try to get out by means of the door. Means is provided to cause the alarm to be actuated if the burglar should attempt to get out by means of the door, without opening of the door. To this end, there is rotatably mounted within opening 30, a knob 130 which looks like the usual knob for retracting a lock bolt. Fixed to the knob 130 and disposed on the inside of the casing, is an arm 131 formed with a rearwardly projecting finger 132. Upon rotating the knob, finger 132 is adapted to engage finger 93. If the door is locked, and a burglar enters the apartment and tries to get out by means of the door, he will naturally turn the knob 130. Turning of the knob cannot possibly retract the bolt or open the door because the knob is not connected to the bolt. But, the turning of the knob, will cause engagement of the finger 132 with finger 93 to push plate 91 to the right, looking at Fig. 1, to cause the alarm to ring. Once the alarm starts

ringing, the burglar cannot shut the alarm off because of a stop pin 134 fixed to the cover, which limits rotation of the arm 131. When the bolt is retracted and the door is open, lug 97 contacts finger 93 to prevent movement of plate 91, by the knob.

In Fig. 7 there is illustrated a modified construction in which the adjusting screw 60a is screwed to the keeper 62a for engaging the bolt 41a.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiments above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In combination with a lock adapted to be attached to a door, and a keeper adapted to be attached to a door jamb, a bolt on said lock, means to project the bolt into the keeper, an alarm, means for actuating the alarm upon jimmied of the door, said means including means to retain the alarm in actuated condition, even when the door ceases to be jimmied, and means on the lock to actuate the alarm while the door is locked by said lock, said last means comprising an inside knob which simulates the ordinary inside knob for retracting or projecting the bolt, which knob, however, cannot control the bolt.

2. A lock comprising a casing, a bolt slidably mounted thereon, a member slidably mounted in said casing and having a pin and slot connection with said bolt, spring means to cause relative movement between said bolt and slidably mounted member, an alarm, means to energize the alarm, including a switch, means on the bolt to close said switch, an inside knob on said lock, which simulates the ordinary inside knob for retracting or projecting the bolt, which knob however cannot control the bolt, means on the knob to close said switch without moving said bolt, and means on the bolt to open said switch when the bolt is retracted, said last means being adapted to prevent closing of the switch by the means on the knob when the bolt is retracted.

3. In combination, a lock adapted to be attached to the inside of a door, key actuated means for opening the lock from the outside, an alarm, means on said lock to actuate the alarm when the door is jimmied with the door in locked condition, and an inside knob on the lock, simulating an ordinary inside knob for retracting or projecting the bolt, said knob however being inoperative to control the bolt, said knob being adapted to be rotated from the inside of the door to actuate said alarm without opening or closing the lock.

4. In combination with a lock adapted to be attached to a door, and a keeper adapted to be attached to a door jamb, a bolt on said lock, means to project the bolt into the keeper, an alarm, means for actuating the alarm upon jimmied of the door, said means including means to retain the alarm in actuated condition, even when the door ceases to be jimmied, means on the lock to actuate the alarm while the door is locked by said lock, said last means comprising an inside knob which simulates the ordinary inside knob for projecting or retracting the bolt, which knob, however, cannot control the bolt, and a screw on said bolt adapted to engage the keeper.

5. A lock comprising a casing, a bolt slidably mounted thereon, a member slidably mounted in said casing and having a pin and slot connection with said bolt, spring means to cause relative movement between said bolt and slidably mounted member, an alarm, means to energize the alarm, including a switch, means on the bolt to close said switch, an inside knob on said casing, simulating an ordinary inside knob for retracting or projecting the bolt, which knob, however, cannot control the bolt, means on the knob to close said switch without moving said bolt, and means on the bolt to limit rotation of said casing.

6. A lock for a door comprising a casing adapted to be attached to said door, a bolt slidably mounted thereon, a member slidably mounted in said casing, means to connect said member to said bolt for limited relative movement, spring means to cause relative movement between said bolt and slidably mounted member, key operated means, operable from the outside of said door to project or retract the bolt, an alarm, means to energize the alarm, including a switch, means on the bolt to close said switch, a knob on said lock rotatable from the inside of the door, said knob simulating an ordinary inside knob for retracting or projecting the bolt, but inoperative to control said bolt, and means on the knob to close said switch without moving said bolt.

7. A lock for a door comprising a casing adapted to be attached to said door, a bolt slidably mounted thereon, a member slidably mounted in said casing, means to connect said member to said bolt for limited relative movement, spring means to cause relative movement between said bolt and slidably mounted member, key operated means, operable from the outside of said door to project or retract the bolt, an alarm, means to energize the alarm, including a switch, means on the bolt to close said switch, a knob on said lock rotatable from the inside of the door, said knob simulating an ordinary inside knob for retracting or projecting the bolt, but inoperative to control said bolt, means on the knob to close said switch without moving said bolt, and means on the bolt to open the switch when the bolt is retracted.

CHARLES KEMP.