G. J. DEFFNER.

BURGLAR ALARM.

APPLICATION FILED JULY 8, 1908.

931,395.

Patented Aug. 17, 1909.

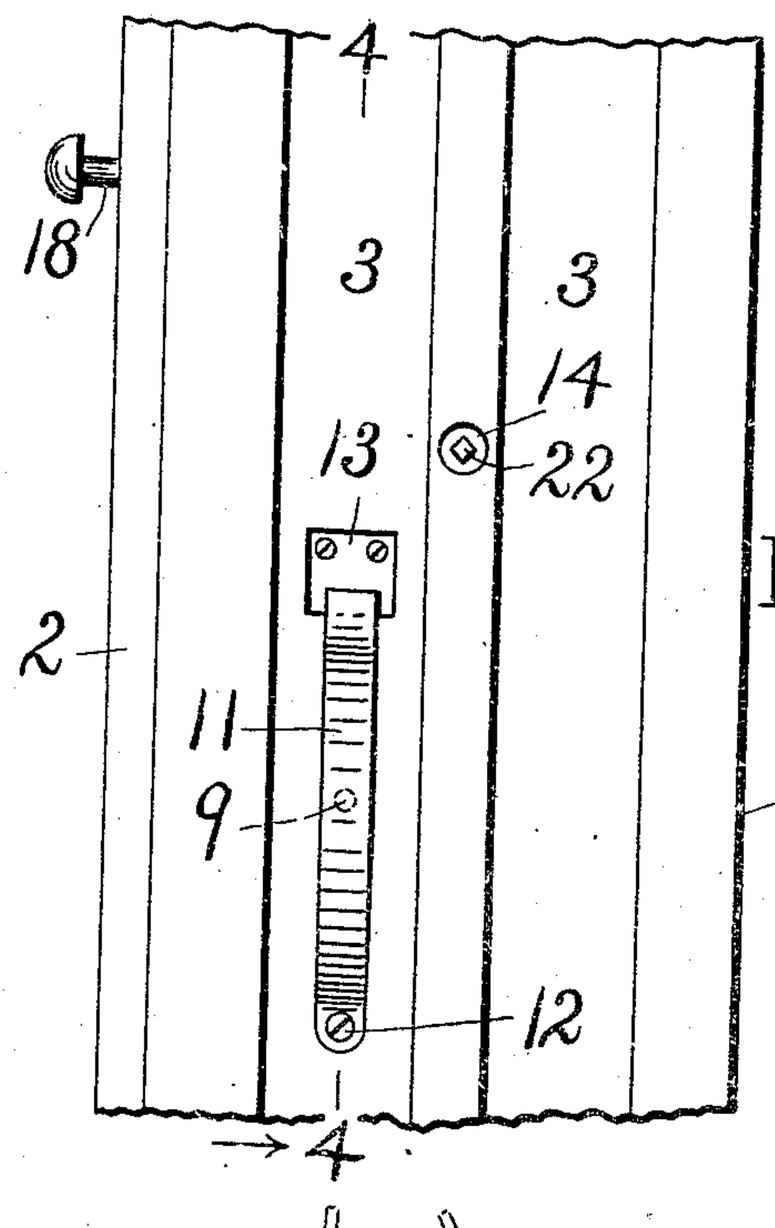

FIG. 1.

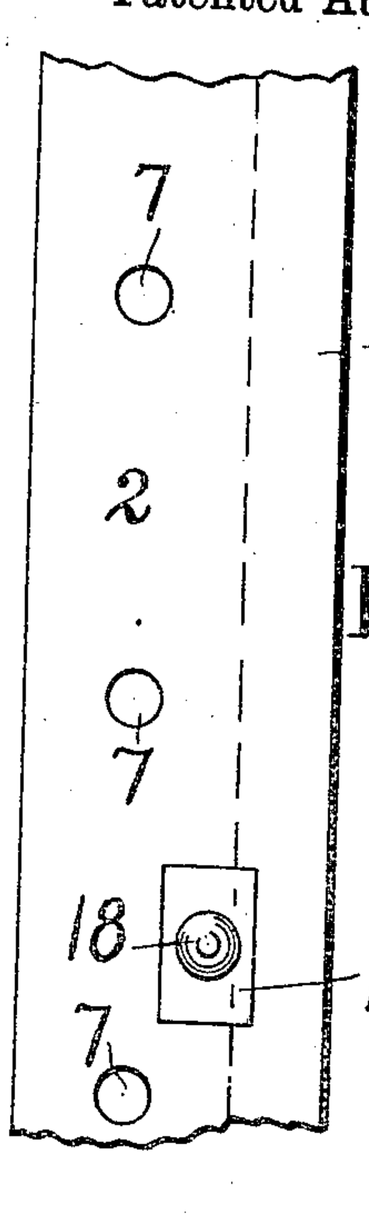

FIG. 2.

FIG. 3.

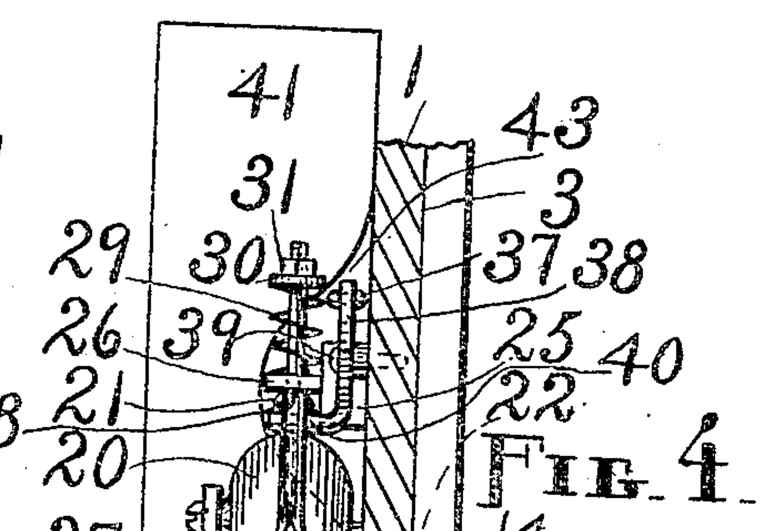

FIG. 4.

WITNESSES:

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BURGLAR-ALARM.

No. 931,395. Specification of Letters Patent. Patented Aug. 17, 1909.

Application filed July 8, 1908. Serial No. 442,486.

To all whom it may concern:

Be it known that I, GEORGE J. DEFFNER, a citizen of the United States of America, residing at West Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Burglar-Alarm, of which the following is a specification.

My invention relates to improvements in mechanical alarm devices for windows, in which I employ certain peculiar mechanism adapted to be located within a window casing and having members outside of such casing by means of which the device is operated when one of the windows is opened, also mechanism operative from the outside for preventing the sounding of the alarm when the window to which said alarm is subject is opened, all as hereinafter set forth.

The objects of my invention are, first, to provide a burglar alarm the major portion of which can be concealed in a window casing, such alarm being so constructed and arranged that it is caused to ring automatically as soon as the window which controls it is opened, and to continue to ring until such window is closed or the alarm runs down; second, to produce an alarm of this kind which can be made subject to either the upper or lower window; third, to furnish convenient means for cutting out the alarm when occasion requires, and, fourth, to provide an alarm which is comparatively simple and inexpensive yet practicable and efficient, compact, and requires but slight movement of parts to operate it. I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a portion of one of the jambs of a window-frame, showing the exposed parts of my device; Fig. 2, an inside elevation of a portion of a window casing of which the aforesaid frame forms a part, showing certain features of the invention; Fig. 3, a back view of the mechanism within said casing, one side of the latter being in section, and Fig. 4, a side view of said mechanism taken approximately on lines 4—4, looking in the direction of the arrow, Fig. 1, a substantial fragment of a window, a portion of the side rail of the sash of which is broken away, being shown in position relative to the jamb and to the mechanism.

Similar figures refer to similar parts throughout the several views.

Although my invention may be employed in connection with an electric push-button, I prefer to use it in connection with an ordinary push-pin-operated bell placed with the major portion of the rest of the mechanism in a window-casing, so as to dispense with wires, batteries, and other more or less complicated and expensive apparatus. The use of a bell of this kind insures positive and unfailing service, and enables me to arrange my whole device compactly in an out of the way place.

The type of bell which I make use of is the well-known type that has a spring adapted to be wound up and locked against action, an actuating member to release such spring, and a knocker operated by said spring when the latter is released by said actuating member to sound the bell and to continue sounding it as long as such actuating member is displaced, the stored energy of the spring being available in this way until the spring runs down. As it is simply required for the purposes of this invention that the bell be provided with an actuating member, and, incidentally, with winding means when necessary, I have omitted all illustration of the interior mechanism of the bell.

It is to be fully understood that any suitable sound-producing device which is capable of being actuated to give an alarm upon depressing a pin, button, or the like, may be employed with this invention.

In the drawings a portion of the jamb of a window-frame which also constitutes one side of a window casing is represented at 1, and another side of such casing at 2. Vertical grooves 3—3 in the jamb 1 are for the upper and lower windows, a portion of the lower window appearing at 5 in the last view. It is the left-hand side rail 6 of the sash of this window that operates the alarm, as will be explained presently. One or more openings or holes may be made in the casing to permit the sound emanating from the alarm when rung to escape freely into the room, three such holes being shown at 7 in the side 2, Fig. 2. An opening 8 is made in the jamb 1, through the bottom of the groove 3 for the window 5, for an actuating pin 9, and the bottom of said groove is channeled at 10 for a bow-spring 11. The base of the bow-spring 11 is secured by a screw 12 to the jamb, and the upper terminal of said spring bears against and can slide on a plate 13 let into the bottom of the aforesaid groove

inside of the bottom of the channel 10. A key-hole 14 is made in the bead between the grooves 3.

In the edge of the sash rail 6 which is adjacent to the jamb 1, near the upper end, is a concave recess 15 to receive the bow-spring without compressing the same when the window 5 is closed, as shown in Fig. 4. Let into the side 2 over an opening 16 therein is a perforated plate 17 for a draw-pin 18 notched at 19 to interlock with said plate when the pin is drawn outward.

Having described the parts of the window, including the frame and casing, with which my invention is most intimately associated and which in some measure enter into said invention, together with such of the members of the new mechanism as are exposed to view, I will next proceed to describe the major portion of such mechanism, which is contained within the casing.

A bell 20, provided with a push-pin 21 at the top and with a winding stem 22 on the front at the center which projects into the key-hole 14, is secured in position by means of a bracket 23 having one end fastened to said bell and the other end to the inner side of the jamb 3. Pivoted at 24 to a block 25 fixed against the jamb is a horizontal lever 26 which extends over the push-pin 21. This lever is perforated at the ends, the perforation in the end nearer the side 2 receiving the upper terminal of a vertical rod 27, and the perforation in the opposite end being for a purpose yet to be explained. The rod 27 has a shoulder 28 upon which the lever 26 normally bears or which normally is forced against said lever through the medium of a spring 29 encircling said rod between the lever and a washer 30 and nut 31 on the upper screw-threaded end of the rod. The base of the rod 27 is pivoted at 32 to one end of a bell-crank-lever 33, and the pin 9 is pivoted at 34 to the other end of said lever. The bell-crank-lever is pivoted at 35 to a standard 36 securely fastened to the jamb.

Under normal conditions the spring 29 and the push-pin 21 keep the rod 27 and the connected terminal of the lever 26 elevated so that the bell 20 does not ring, and when said rod is thus disposed the bell-crank-lever 33 retains the pin 9 in its outward position with the front end in the recess 15, as clearly appears in Fig. 4; but if the window 5 be raised said bell instantly will begin to ring and will continue to ring until said window is again closed or until the bell runs down, owing to the compression of the spring 11, the consequent inward movement of the pin 9, the rocking of said bell-crank-lever by said pin, the drawing down of said rod by said lever, and the downward tilting of that portion of said lever 26 which bears on said push-pin, the lever being the direct agent by means of which the push-pin is thrust downward into the bell to cause the same to sound. As soon as the window 5 is closed the spring 11 expands into the recess 15 and allows the pin 9 to move outward and the bell-crank-lever, rod 27 and lever 26 to resume their former positions under the influence of the spring 29 and the push-pin 21. The push-pin 21 being thus released springs upward and the ringing ceases. It will be understood, of course, that the spring 11 when flattened by the side rail 6 is received into the channel 10, so as not to interfere with the raising of the window.

Connected by a link 37 with the inner end of the draw-pin 18 is a dog 38 pivoted at 39 to the jamb 1 on the inside. This dog has a foot-piece 40 which extends beneath the lever 26 between the pivot 24 and the rod 27. The office of the dog 38 is to prevent the sounding of the bell 20 when it is desired to open the window from the inside, it then being simply necessary to draw out the pin 18 and engage its notched part 19 with the plate 17, which operation tilts said dog through the medium of the connecting link 37 and thrusts the foot-piece 40 against the underside of the lever 26. With the parts disposed as just explained it will be seen that the lever 26 will be held up by the foot-piece 40 when the rod 27 is depressed, and so prevented from acting on the push-pin 21, the spring 29 permitting said rod to move down without the lever and the shoulder 28 to leave said lever. Upon releasing the draw-pin from locking engagement with the plate 17, the weight of the free terminal of the dog 38 causes such terminal to swing downward away from the lever 26, and said pin to be drawn inward, (or the pin can be pushed inward when unhooked and the dog thus rocked out of the way of the lever), and the lever is left to the influence of the actuating or operating mechanism. This disconnecting mechanism for the bell need not be used in case the bell is run down, but usually the bell will be kept wound. A key (not shown) is employed to wind the bell, such key being introduced into the key-hole 14 and engaged with the stem 22 for the purpose.

In order to prevent the window weights which travel up and down in the casing from fouling the alarm mechanism, combined guards and guides may be provided, one between each side of the mechanism and the adjacent side of the casing. Such combined guards and guides which are suitable for the purpose are represented by dot-and-dash lines 41 and 42 in Fig. 3, and in Fig. 4 an elevation of the member 41 is shown in full lines. The member 41 has a lateral wing 43 to cover the adjacent end of the arm 26, and the member 42 has a similar wing 44 to cover the link 37 and parts of the draw-

pin 18 and the dog 28. The wings 43 and 44 must be large enough to permit free movement on the part of the members covered thereby.

Such an alarm as this is generally used in connection with a lower sash, but if it is desired to employ the same in connection with an upper sash it can easily be done by placing the bell-crank-lever and its standard above the lever 26, passing the rod 27 through the opening, 45, in the end of said lever 26 which is opposite that engaged by said rod when the mechanism is used with a lower window, and locating the spring 11 in the groove 3 for the upper window into which groove the pin 9 will then protrude. The position of the disconnecting mechanism need not be changed. The operation will be substantially the same as in the other case. While more or less alteration in the shape of some of the parts may be made necessary by reason of the relocation of the operating mechanism, no such alteration will be of such a character as to affect the invention; moreover, it is obvious that in any event minor changes in the shape, size, and construction of some or all of the parts may be made, in order to adapt the device to different window casings, without departing from the scope of the appended claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a burglar alarm, with the actuating member of a bell, and a pivotally mounted lever in operative relation to such member, of an operating member for such lever, a yielding connection between said operating member and said lever, an operating member for said lever-operating member, and an operating pin for said second-mentioned operating member.

2. The combination, in a burglar alarm, with the actuating member of a bell, and a pivotally mounted lever in operative relation to such member, of a member yieldingly connected with such lever, means to actuate such last-mentioned member to cause it normally to rock said lever against said actuating member for the bell, and means to prevent the lever from following the member which is yieldingly connected with the lever.

3. The combination, in a burglar alarm, with the actuating member of a bell, and a pivotally mounted lever in operative relation to such member, of a member yieldingly connected with such lever, means to actuate said last-mentioned member to cause it normally to rock said lever against said actuating member for the bell, a movable dog, and means to retain such dog in the path of the lever to prevent the latter from following the member which is yieldingly connected therewith.

4. The combination, in a burglar alarm, with the actuating member of a bell, and a pivotally mounted lever in operative relation to such member, of a member yieldingly connected with such lever, means to actuate said last-mentioned member to cause it normally to rock said lever against said actuating member for the bell, a movable dog, a draw-pin connected with said dog, and a locking member for said pin when drawn outward, the arrangement of parts being such that the lever is prevented from following the member which is yieldingly connected therewith when the draw-pin is outwardly disposed.

5. The combination, in a burglar alarm, with a window jamb, and a window, of a bell mounted on the inside of such jamb and provided with a push-pin, a lever pivotally mounted in operative relation to such pin, a longitudinally-movable operating pin extending into the path of travel of such window, and connecting members between said lever and said operating pin to cause the lever to actuate said push-pin when the operating pin is moved inward by said window.

6. The combination, in a burglar alarm, with a window jamb, a window, and a bow-spring arranged between such jamb and the window and adapted to be compressed by the latter when opened, of the actuating member of a bell inside of said jamb, a lever pivotally mounted in operative relation to such member, a longitudinally-movable operating pin having its outer end in contact with said spring, and connecting members between said lever and said pin to cause the lever to act on said actuating member for the bell when the operating pin is moved inward by the spring when compressed.

7. The combination, in a burglar alarm, with a window jamb having a key-hole therein, and a window, of a bell mounted on the inside of such jamb and provided with a push-pin and with a winding stem accessible through said key-hole, a lever pivotally mounted in operative relation to such pin, a longitudinally-movable operating pin extending into the path of travel of such window, and connecting members between said lever and said operating pin to cause the lever to actuate said push-pin when the operating pin is moved inward by said window.

8. The combination, in a burglar alarm, with a perforated window casing provided with a perforated plate, and a window, of the actuating member of a bell within such casing, a pivotally mounted operating lever for such actuating member, a member yieldingly connected with such lever, means to move said last mentioned member when said window is opened to cause said lever to act on said actuating member for the bell, a dog, and a locking member connected with such dog and extending through the perforations in said casing and plate and adapt-

ed when drawn outward and locked to throw said dog into operative relation to said lever and to retain it in such position to hold the lever against the action of the member which is yieldingly connected therewith.

9. The combination, in a burglar alarm, with a window casing, of a bell and an operating lever therefor within such casing, operating mechanism and disconnecting mechanism also within such casing for said lever, and guards at the sides of said bell and operating mechanism and covering portions of the lever and of said disconnecting mechanism to serve as guides for window weights.

10. The combination, in a burglar alarm, with the actuating member of a bell, and a pivotally mounted lever in operative relation to such member, of an operating member for such lever, the latter being adapted to have such operating member connected with either end thereof, an operating member for said lever operating member, and an operating pin for said second-mentioned operating member.

GEORGE J. DEFFNER.

Witnesses:
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JOHN H. TURCOTTE.