(No Model.)

J. GIVEN.

BURGLAR ALARM.

No. 543,548. Patented July 30, 1895.

Fig. 1.

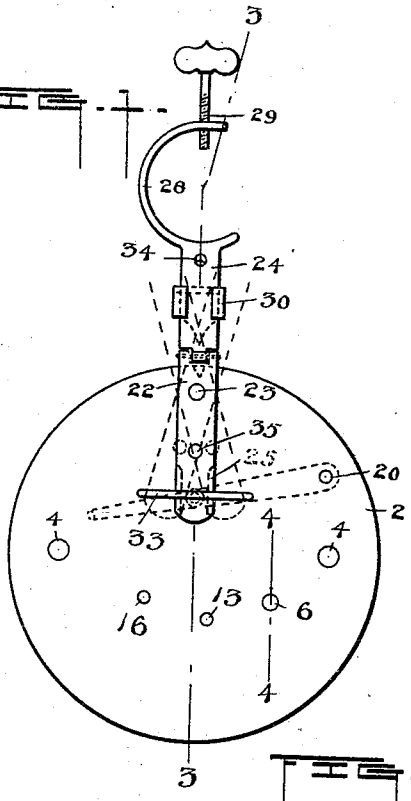


Fig. 2.

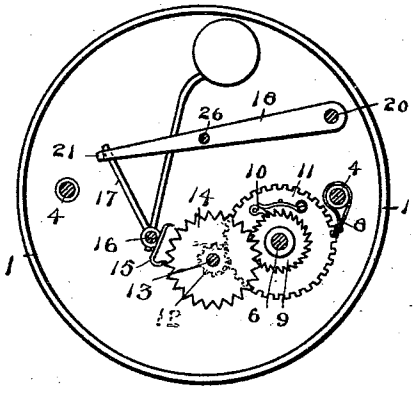


Fig. 3.

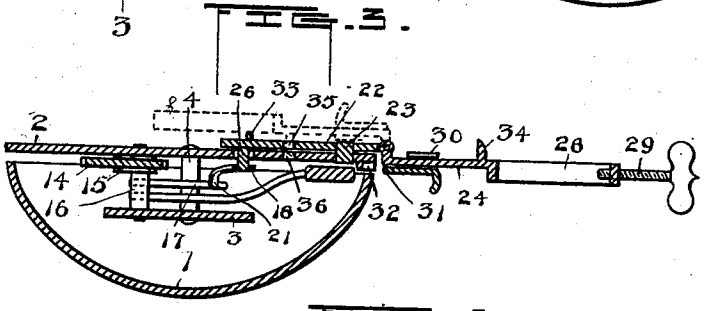
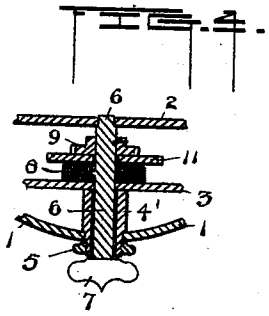


Fig. 4.



Witnesses
Arch M. Catlin.
John J. Clark.

Inventor
Joshua Given
by
Benj. R. Catlin Attorney

UNITED STATES PATENT OFFICE.

JOSHUA GIVEN, OF ELGIN, ILLINOIS.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 543,548, dated July 30, 1895.

Application filed October 9, 1894. Serial No. 525,409. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA GIVEN, a resident of Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Burglar-Alarms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

The invention has for its object to improve the construction and operation of alarm-bells and to provide means for suspending the bell to a door-knob or the like, which shall be adapted to be compactly folded and locked in its folded position, said means also comprising a cam-bar adapted mediately to release the alarm, which cam-bar is locked when folded; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings, Figure 1 is a bottom plan. Fig. 2 is a similar view with the back plate removed. Fig. 3 is a section on line 3 3 of Fig. 1. Fig. 4 is a section on line 4 4 of Fig. 1.

Numeral 1 denotes the shell or gong of a bell of usual construction. The mouth of the bell is nearly closed by a circular plate 2, which is rigidly fixed to an interior plate 3 by means of intervening posts 4. The plate 3 is supported by the hollow threaded post 4′, which receives the hollow securing-screw 5, and the whole interior mechanism, as well as both plates, are by this means sustained within the bell and out of contact with its gong, except through the medium of said post 4′.

6 is a winding arbor having a head 7. To this arbor is secured one end of a spring 8, its opposite end being fixed to a post 4. Fixed on the same arbor 6 is a ratchet-wheel 9, and 10 is a pawl pivoted to a gear-wheel 11, mounted loosely on said arbor, but normally held from turning by escapement mechanism to be described.

The construction and arrangement of arbor, spring, ratchet, and pawl are such that the spring can be put under tension by suitably turning the arbor, the pawl passing freely over the ratchet-teeth at such time, but engaging them to prevent the recoil of the spring, the wheel 11 holding the pawl engaged with the ratchet fixed on the arbor and the escapement holding the said wheel 11. The gear 11 meshes with a pinion 12, fixed on an arbor 13, which arbor carries an escapement-wheel 14.

15 denotes an escapement secured upon a shaft 16. These parts are of usual character and construction. To this shaft 16 is attached a radial arm 17, which is normally engaged and held against the action of the spring 8 by a stop, which consists of the spring-arm 18, having pivotal connection with plate 2 at 20 and provided with a finger 21 situated in the path of the arm 17.

22 indicates a bar, preferably made of steel, loosely pivoted at 23 to the plate 2 and having a hinged connection with an extension 24, the latter being thus adapted to be turned down in contact with said pivoted bar.

The bar 22 is normally situated in a central line of plate 2, as represented in full lines in Fig. 1. On its under side is a cam-surface 25 conveniently formed by chamfering the under edges of the bar, as indicated by dotted lines in said figure. As represented in Figs. 1 and 2, the highest part of the cam bears on a pin 26, which pin is fixed to a spring 18 rigidly held to a plate 2 at 20. The free end of spring-bar 18 is bent at 21 to constitute a stop or holding-finger adapted to hold an escapement-bar 17 and mediately to hold an escapement and gears against the action of spring 8. If the free end of bar 25 be swung to either side the pin 26 and spring 18 are released and the latter takes its finger out of engagement with arm 17, which releases the escapement arbor or shaft 16 and permits the mainspring 8 to move the escapement-wheel 14 through the medium of the gears above described, with the effect to vibrate the hammer 27 fixed on said arbor.

The extension 24 is provided with a curve or bend 28, suitable to embrace the spindle of a door-knob, and 29 is a set-screw for making it fast thereon. The bell being suspended in this manner from the spindle will, by its weight, hang below the same even though the bar 22 be moved laterally, as by the turning of the door-knob spindle. This produces a movement of the cam 25, which pushes in the pin 26 and arm 18 and releases the alarm mechanism, as above described. To prevent

this operation when desired, a catch 30 is movably connected with the bar-extension 24, as by having its edges bent about the same, as shown.

31 denotes a point or tooth to engage a suitable notch 32 in plate 2, whereby the catch locks the bar against movement in the plane parallel to the plane of the plate.

33 denotes a yoke adapted to hold the free end of bar 22 near the said plate.

34 denotes a friction-pin, which is adapted to enter the hole 35 in bar 22 and also a hole 36 in plate 2 whenever said holes register, and the extension 24 is suitably turned on its hinge. The friction of this pin will be sufficient to hold the hinged part 24 in close proximity to the bar 22, and when thus arranged the device can be conveniently carried in a pocket on the person. As this pin passes through bar 22 and plate 2 it locks said bar and insures that the bell cannot then be rung.

The invention is not limited to use with door-knob spindles, but it is intended for operation in connection with any moving device connected to a door, window, or other structure provided such structure or part thereof is suitably connected to the swinging cam-bar 22 in manner to move it about its pivot, and though it is characteristic of the improvement that the inertia of the bell itself when suspended, as described, causes it to hang stationary when bar 22 is moved or swung, as by the turning of a door-knob spindle, yet the device will operate provided the bar and the bell are relatively moved by any means. Thus, if the device be placed with its flat back or plate 2 downward and on a suitable support, the friction would be sufficient to hold it in place while the cam was operated to release the alarm-stop, as described.

The curve 28 of the bar-extension 24 is not essential in all cases, nor the particular means of fastening said extension upon the bar 22 when folded down thereon, nor the exact form of the catch that locks part 24 to plate 2, and these and other details may be varied provided the same mechanical and operative principles are preserved.

It is characteristic of my improvement that the winding arbor extends through the bell-gong and is thereby so situated as not to interfere with the folding together of the parts 22 and 24, and so as not to interfere with laying the device down flat upon its back when necessary, and, further, the arbor is placed at one side of the crown or summit of the bell and in its shoulder to avoid increasing the longitudinal axis of the structure, as in bells having such arbor centrally located. This also provides that the gears and closely-connected parts may be situated entirely at one side of the center, whereby ample room is left on the other for the escapement and spring-stop bars and the hammer, and whereby greater freedom and extent of motion can be given to these parts. It is placed at one side of the axis of the bell to permit the suitable arrangement of the interior alarm mechanism, and so that the bar 22 can be pivoted to the plate 2 and lie in the direction of its diameter when the alarm is suspended in readiness for operation, and also when the suspending-bar is folded.

Having thus described my improvement, what I claim is—

1. The combination of an alarm bell having a plate 2, a stop to hold the alarm mechanism at rest and a bar adapted to move the stop to release the mechanism, said bell being pivoted to the bar and said bar having an extension adapted to be folded down upon the plate and to lock the alarm in an inoperative position and also provided with devices for attaching it to a door spindle or the like, substantially as set forth.

2. The combination in an alarm bell of the pivoted suspending bar, the spring bar 18 fixed at one end and at the other provided with a stop 21, and having a pin 26, a pivoted arm 17 connected by an escapement and intermediate gears to a hammer-operating spring, and said hammer the suspending bar normally bearing on the pin and holding the spring 18 under tension and its finger in engagement with the escapement bar, substantially as set forth.

3. The combination of an alarm bell having a stop to hold the alarm mechanism at rest and a bar adapted to move the stop to release the mechanism, said bell being pivoted to the bar and said bar having a folding extension provided with devices for attaching it to a door spindle or the like, said extension having a pin adapted when the extension is folded upon the bar to enter a hole therein and a hole in the bell closing plate to hold the parts together and hold the bar inoperative, substantially as set forth.

4. The combination of the alarm bell having a plate 2 and alarm mechanism inclosed thereby, a stop to hold said mechanism at rest comprising a spring bar 18, a pin fixed on said spring bar and extending through the plate and a swinging cam-bar adapted when suitably moved to depress the pin and move the stop to release the alarm mechanism, substantially as set forth.

5. In an alarm bell the gong, the hammer mechanism, and the plate 2 provided with a notch or recess 32 in combination with the folding suspending bar pivoted to the plate and having a hinge near the edge of said plate and adjacent to said recess, said bar being adapted by intermediate devices to hold the alarm at rest until moved about its pivot, and a sliding catch 30 adapted to enter said recess to hold the bar from folding and also to prevent its turning on its pivot, substantially as set forth.

6. An alarm bell having a flat back and a suspending bar for attaching it to a door spindle or the like, said bar being attached to said back and having a hinged extension

adapted to fold upon the bar adjacent to the back, the main hinge being situated near the periphery of the bell and the entire bar and bar extensions except the hinge lying when folded within said periphery, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSHUA GIVEN.

Witnesses:
FRANK N. JOSLYN.
OTTO HOERETH.