W. KOZIOL.

SAFETY LOCK.

APPLICATION FILED MAR. 26, 1921.

1,384,723. **Patented July 12, 1921.**

2 SHEETS—SHEET 1.

FIG. 1

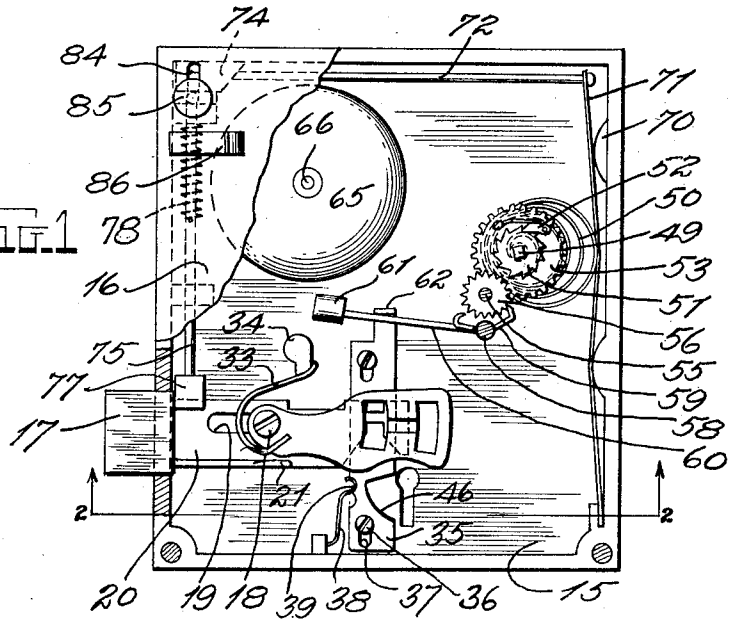


FIG. 2

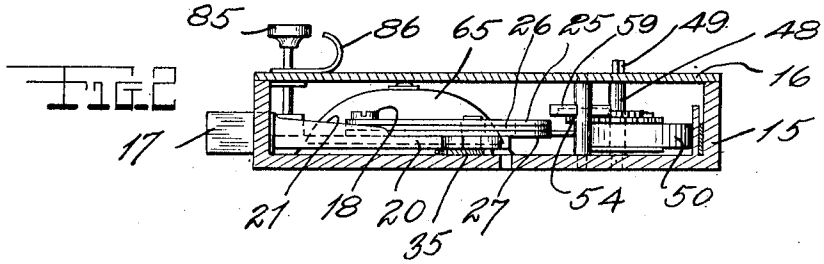


FIG. 3

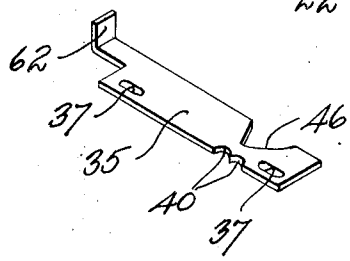
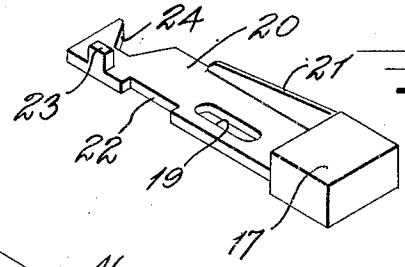


FIG. 4



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2 SHEETS—SHEET 2.

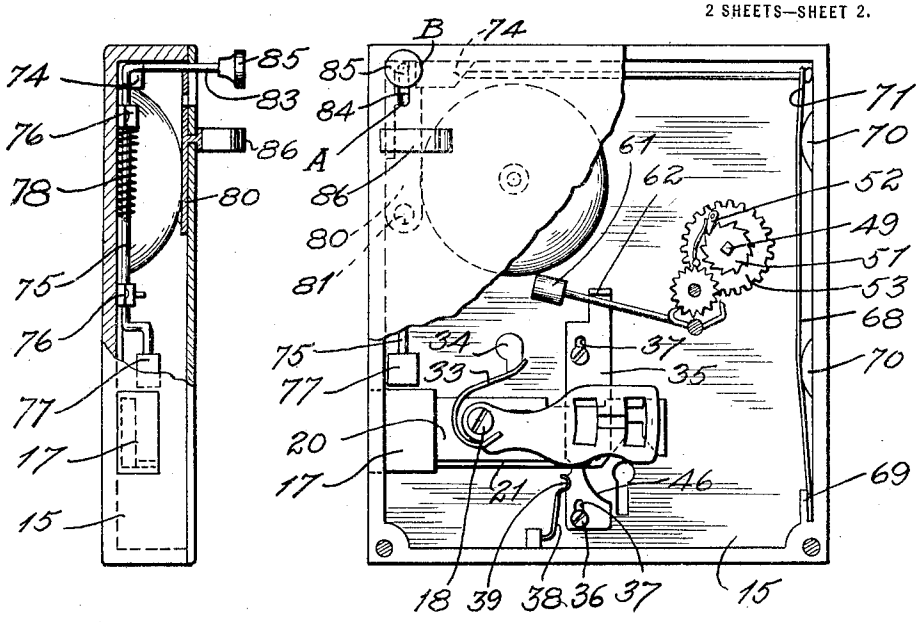


FIG. 5 FIG. 6

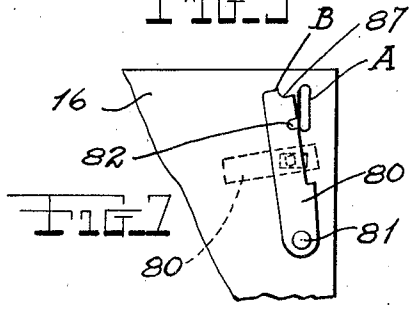


FIG. 7

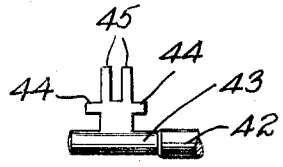


FIG. 8



FIG. 9

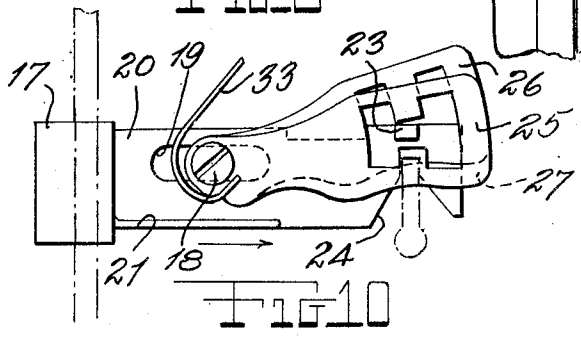


FIG. 10

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WILLIAM KOZIOL, OF EASTHAMPTON, MASSACHUSETTS.

SAFETY-LOCK.

1,384,723. Specification of Letters Patent. Patented July 12, 1921.

Application filed March 26, 1921. Serial No. 455,965.

To all whom it may concern:

Be it known that I, WILLIAM KOZIOL, a citizen of Poland, residing at Easthampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Safety-Locks, of which the following is a specification.

The principal purpose of this invention is to produce a lock of the type commonly applied to swinging doors for securing them in closed position, the lock being provided with means for automatically sounding an audible signal if attempts be made to tamper with the same unauthorizedly.

A further object is to provide means combined with the lock which prevent an alarm being given when actuated by persons familiar with its peculiarities, a switch being provided for engaging or disengaging the sound signal device, the switch being operated from the inner side of the door.

Further objects, such as effective protection against unwarranted intrusion, cheapness of construction and neatness of appearance, are attained by the novel construction, combination and arrangement of parts hereinafter described and shown in the accompanying drawings, forming a material part of this disclosure, and in which:—

Figure 1 is a plan view of a lock made in accordance with the invention, the cover being broken away to disclose the construction.

Fig. 2 is a transverse sectional view taken on line 2—2 of Fig. 1.

Fig. 3, is a perspective view of the alarm controlling slide.

Fig. 4 is a similar one of the lock bolt.

Fig. 5 is a front elevational view of the lock, part being broken away showing a portion of the interior.

Fig. 6 is a plan view similar to Fig. 1 but showing the parts in another position.

Fig. 7 is a fragmentary plan view of the alarm switch.

Fig. 8 is a fragmentary view of the key used in connection with the lock.

Fig. 9 is a view showing the application of the lock.

Fig. 10 is a detail plan view of the lock levers in operative position.

Stated in brief general terms, the lock comprises the usual casing containing a key actuated sliding bolt together with its locking levers.

A bell and spring actuated hammer is also located in the casing, the same having an escapement by which a continuous ringing may be obtained when a key is entered and turned in the lock, provided the alarm controlling switch is set to permit the same, thus giving audible warning of an attempted entrance.

Referring now more particularly to the drawings, the numeral 15 designates a hollow rectangular casing adapted to be secured in or on an ordinary door, the casing being provided with a cover 16.

A lock bolt, having an enlarged extensible head 17, is slidably contained in the casing, the same being confined by a screw 18 passing through a slot 19 in the body 20 of the bolt, the reduced body portion of which is reinforced by a rib 21 connecting with the head at one side.

A recess 22 is formed in the opposite edge of the bolt body, beyond which is a lug 23 and opposite the lug is an angular recess 24 into which the wards of the key enter as will further on become apparent.

The lock bolt levers 25, 26 and 27, respectively upper, intermediate and lower are pivoted at their forward ends on the screw 18, their wider rear portions containing approximately H shaped recesses into which extend lugs from both sides engageable with the lugs 23 unless positioned to clear the same by the wards of the keys.

These several levers are each independently normally pressed in the direction of the key by springs 33 set in slits in the levers at one end, partially encircling the pivot screw 18 and bearing against an abutment 34 fixed in the casing.

Positioned transversely below the bolt body 20 is a slide 35 held by screws 36 passing through slots 37 near the ends at one side, the screws limiting the movement of the slide which is held in position by a flat tension spring 38, fixed at one end in the casing and curved at the other into a detent 39 engageable in either of the recesses 40 in the edge of the slide.

The key, which is of the usual character,

comprises a stem 42 having a reduced end 43 from which extends a plate bearing a pair of oppositely extending wards 44, parallel with the stem and a pair of spaced projecting wards 45, the latter being adapted to actuate the bolt levers as the key is turned and also to move the bolt into locked or unlocked position, while the inner ward 44 passes over the slide 35 without moving the same, as would occur by the use of an ordinary door key.

Mounted to extend through the cover plate 16 is a spindle 48, its squared extending shank 49 being adapted to receive a winding key and secured to the spindle is the inner end of a spiral spring 50, the outer end of which is fixed to the casing.

Secured to the spindle 48 is a ratchet wheel 51 engaged by a spring pressed pawl 52 pivoted on the side of a gear 53 loosely mounted on the spindle, this gear meshing with a pinion 54 fixed on a stud 55 to which is also attached an escapement wheel 56 so that the latter may be rotated by action of the gear 53 and the spring 50 which obviously is capable of being wound by a key applied to the squared end 49 of the spindle 48.

Pivoted on another stud 58 is an escapement fork 59 engaging the teeth of the wheel 56, permitting the passage of one of its teeth at each oscillation of the fork in a well known manner, and carried by the fork is an arm 60 having at its outer end a hammer 61.

Also engaging the arm 60 is a detent 62 formed with the slide 35 and which when in the position shown in Fig. 1 prevents movement of the escapement, but when as shown in Fig. 6 allows the arm 60 to be actuated by the spring therein.

A bell 65 of the usual type is fixed rigidly on a post 66 set in the lock casing and so positioned that the hammer 61 can make contact with it when actuated.

It will now be seen that if an ordinary key be entered and turned in the lock the slide 35 will be pressed forward, liberating the bell hammer arm, which, being energized, through the escapement elements, by the spring 50, makes rapid repeated contact with the bell and gives an alarm.

As the coils of the spring 50 open, the outermost convolution makes contact with a flat spring 68 extending adjacent the rear wall of the casing to which it is secured at one end, as at 69.

A pair of spaced projections 70 are formed with the casing wall and equi-distant from the axis 49 of the spring 50, so that as its outer coil makes contact with the spring 68 it is deflected causing the free end 71 to move inwardly.

Attached to the spring end 71 is a rod 72 extending along the adjacent wall of the casing and attached at its opposite end to a block 74 slidable against the casing wall parallel to the lock bolt.

A rod 75 mounted to slide in brackets 76 fixed in the casing, is offset at its end adjacent the lock bolt and fixed to the offset end is a block 77 adapted to engage the bolt body 20 at a point adjacent its head, as shown in Fig. 1, when the rod is pressed against it by the coiled compression spring 78 encircling the rod between the bearings 76.

The block is normally held out of contact, as shown in Fig. 6, by a latch 80 pivoted at 81 to the cover plate 16, this latch having a notch 82 engageable with the angularly turned end 83 of the rod 75, this angle end extending through a slot 84 in the casing plate and being provided with a knob 85 by which it is maneuvered.

Means for moving the latch manually are provided in the pull 86 fixed in the plate and extending along the upper surface of the cover plate 16. When the block 77 is in a downward position it is held by the rod 83 entering a recess 87 in the corner of the latch 80.

Now if the spring 50 becomes slackened or unwound sufficiently to bend or deflect the spring 71, the rod 72 and block 74 are projected forward and pass between the wall of the casing and the angle rod 83, then in a downward position, forcing the block 77 against the lock bolt 20 as in Fig. 1 and preventing its retraction by the use of a key.

Thus if the alarm should fail to bring a person to the door the lock will not respond to the insertion and operation of a key under any circumstances.

However an operator from the inner side of the door can, by swinging the latch, hold the block 77 out of engagement, a condition not presumed to be known to intruders, who thus fail to open the door.

The disclosure is to be regarded as descriptive only and not as restrictive or limitative of the invention, of which obviously an embodiment may be constructed including many minor modifications without departing from the general scope herein indicated and hereafter claimed.

While in the foregoing there has been shown and described the preferred embodiment of this invention, it is to be understood that certain minor changes, in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

I claim—

1. A lock comprising a casing, a key actuated bolt slidable therein, a bell and spring actuated hammer therefor, a detent for said hammer releasable by the lock key, and means preventing the retraction of said bolt,

said means becoming operative upon the slackening of the hammer actuating means.

2. A lock comprising a casing, a sliding bolt and means for actuating said bolt, an alarm in said casing, a spring for actuating said alarm, means for controlling the operation of said spring, said means becoming operative upon the use of a spurious key, and means for preventing the retraction of said bolt, said means becoming operative upon the expansion of the alarm actuating means.

In witness whereof I affix my signature.

WILLIAM KOZIOL.

Witness:
MICHAEL T. O'BRIEN.