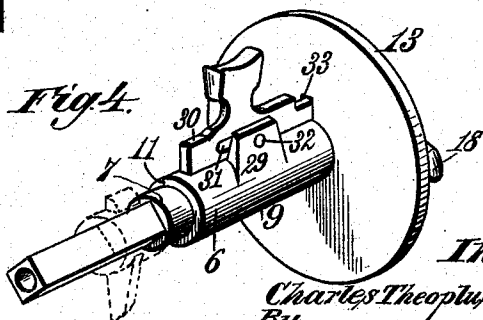
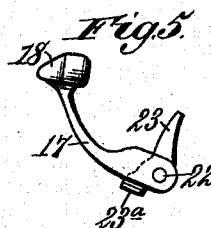
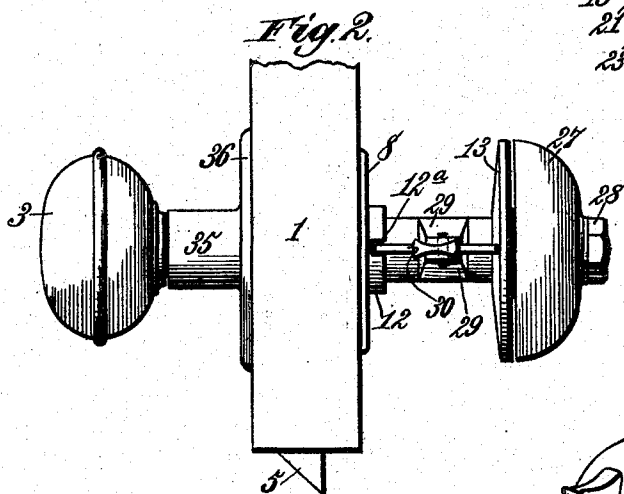
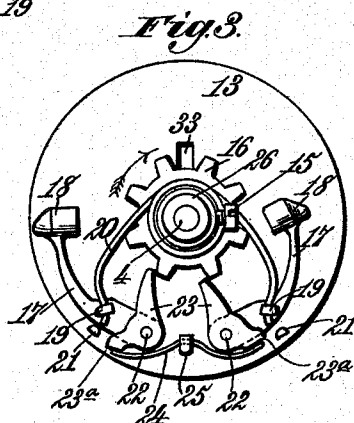
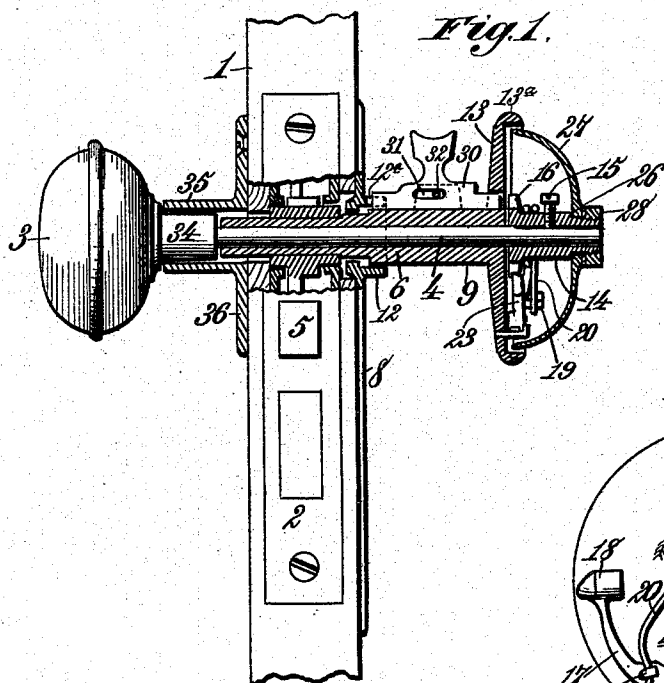


C. T. HOLMAN.
ALARM LOCK.

Patented Mar. 5, 1895.



Witnesses:
Robert Everett.
Ransom Norris.

Inventor:
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By
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Atty

UNITED STATES PATENT OFFICE.

CHARLES THEOPLUS HOLMAN, OF ATLANTIC, PENNSYLVANIA.

ALARM-LOCK.

SPECIFICATION forming part of Letters Patent No. 535,288, dated March 5, 1895.

Application filed December 29, 1894. Serial No. 533,333. (No model.)

To all whom it may concern:

Be it known that I, CHARLES THEOPLUS HOLMAN, a citizen of the United States, residing at Atlantic, in the county of Crawford and State of Pennsylvania, have invented new and useful Improvements in Alarm-Locks, of which the following is a specification.

My invention relates to an improved alarm lock, and has for its object to provide improved mechanism adapted to be applied to an ordinary door lock by means of which the latch may be operated to open the door by turning the knob from either side of the door, or may be readily adjusted in such manner that when the knob is turned an alarm is sounded and the latch prevented from being operated by the knob.

To these ends my invention consists in the novel features and in the combination and arrangement of parts hereinafter described and definitely pointed out in the claims following the description, due reference being had to the accompanying drawings forming a part of this specification, wherein—

Figure 1, is a vertical central sectional view. Fig. 2, is a plan view. Fig. 3, is an end elevation of the disk and the bell striking mechanism. Fig. 4, is a detail perspective view of the hollow shaft and its attached disk, showing the sliding bolt, and in dotted lines illustrating the manner of engaging the hollow shaft with the spring latch dog, and Fig. 5, is a detailed view of one of the bell hammers and its tripping lever.

Referring to the drawings the numeral 1 indicates a door; 2, a lock of ordinary or any desired construction; 3, the outer knob; 4, its spindle, and 5 the usual spring latch.

The numeral 6 indicates a hollow shaft through which the knob spindle 4 passes, and at its inner end is squared to fit the square aperture in the dog which operates the spring latch 5. Said hollow shaft 6 intermediate its ends is provided with a cylindrical portion 7 that has a bearing in the inner escutcheon 8 and is also cylindrical for the remainder of its length, as at 9, though of a slightly greater diameter than the cylindrical portion 7, forming a shoulder 11 that abuts against the face of the escutcheon. The inner end of the cylindrical portion 9 of the hollow shaft 6 has a bearing in an annular boss 12 that is slotted

as at 12^a, for the purpose hereinafter described. Secured to the outer end of the hollow shaft 6 is a disk 13 carrying the bell hammers, and said disk and the hollow shaft 6 to which it is secured are held in place by a sleeve 14 that is slipped over the end of the knob spindle 4 and rigidly secured thereto by a set screw 15 that is tapped through said sleeve and engages said spindle which is planed off on one side for the purpose. To the inner end of the sleeve 14 is rigidly secured a toothed wheel 16, or said wheel may be formed integrally with the sleeve, if desired, which lies in close juxtaposition to the disk 13. Pivoted to said disk 13, near the periphery thereof, are two curved levers 17 carrying at their extremities hammers 18, and said hammers intermediate their ends are provided with studs or projections 19 that are engaged by the ends of a spring 20 that is coiled about the sleeve 14 and operates to throw the hammers outward, stop pins 21 being secured in the disk 13 to limit the outward movement of the hammers.

Pivoted upon the same pivot pins 22 that serve to pivot the hammer levers 17 to the disk 13 are trip levers 23, each of which at one end is provided with a hooked projection 23^a that is adapted to engage the under or outer side of its adjacent hammer lever 17, and at its other or free end is adapted to be engaged by the teeth of the toothed wheel 16. A leaf spring 24 bears at its opposite ends against the hooked ends of the trip levers 23 and is held to its place by a pin 25 that is fixed in the disk 13 and over which said spring is bent or strained. Said spring constantly exerts its tension to throw the upper or free ends of the trip levers into the path of the teeth on the wheel 16.

The outer end of the sleeve 14 is slightly reduced and screw-threaded, forming a shoulder 26 over which is slipped a gong or bell 27, which is held seated against the shoulder 26 by a nut 28. Said gong or bell is of approximately the same diameter as the disk 13 and is adapted to be alternately struck by the hammers 18, as hereinafter described, and also serves as a knob, but if desired a knob may be secured to the outer end of the sleeve 14 beyond the bell.

The cylindrical portion 9 of the hollow shaft

6 is provided with two ears 29 between which is seated a bolt 30, said bolt being provided with an elongated slot 31 through which passes a pin 32 that is secured in the ears 29, whereby the said bolt is permitted to have a limited longitudinal movement. The disk 13, at a point opposite the bolt 30 is provided with an aperture or slot 33, through which the end of the bolt is adapted to pass and engage the teeth of the wheel 16, and the other end of said bolt may be caused to engage the slot 12^a in the annular boss 12 formed on the escutcheon 8.

In order to strengthen the outer end of the spindle 4 I provide the knob with a hub 34 which is arranged over said spindle and fits within a tubular boss 35 carried by the escutcheon 36 fitted upon the outer side of the door.

The operation of my improved device is as follows: When it is desired that the door latch shall operate in the ordinary manner, the bolt 30 is moved in the direction to cause its end to project through the slot 33 in the disk 13 and pass between two teeth of the toothed wheel 16. If now the knob 3, or the bell 27, which, for the sake of explanation may be termed a bell knob, be turned in either direction, the toothed wheel 16, which is in engagement with the bolt 30 and which is caused to turn with the knob spindle 4 by means of the set screw 15, causes the hollow shaft 6 to turn with it, thus operating the spring latch of the lock. It also causes the disk 13 to turn with it, and since the bell hammer levers 17 and trip levers 23 are carried by the disk, said disk, hammer levers, trip levers, toothed wheel and bell, are all caused to turn in unison and hence the hammers are not actuated to strike the bell. If, however, it be desired to prevent the door from being opened from the outside and to throw the bell striking mechanism into operation, the bolt 30 is moved in a direction opposite to that last described, which withdraws the bolt from its engagement with the toothed wheel 16 and causes it to engage the slot 12^a in the boss 12 formed on the escutcheon 8. If the knob, or bell knob, be now turned in either direction, the hollow shaft 6 being locked against rotation by the engagement of the bolt with the boss 12, and said bolt being disengaged from the toothed wheel 16, the latch will not be operated, and the disk 13 will be held stationary. As the toothed wheel 16 begins to rotate (in the direction of the arrow, for example) two of its teeth will engage the free ends of the trip levers 23, and as the wheel continues to revolve the foremost tooth rocks the trip lever shown on the left idly upon its pivot until it passes over the end of the trip lever, when the latter is instantly restored to its normal position by the spring 24. At the same time the other trip lever is being rocked in the same direction by the succeeding tooth, and by its hooked projection 23^a lifts its hammer lever 17 against the tension of the spring 20 until the tooth

passes over its free end, when said spring 20 immediately throws said hammer lever forcibly outward causing the hammer 18 to strike the bell 27. If the knob be turned in the opposite direction, the other hammer will be operated in like manner, one hammer always being operated to strike the bell while the other remains idle, no matter in which direction the knob is turned.

From the foregoing description it will be seen that when the bolt 30 is in one position the spring latch will be operated by the knob in the ordinary manner to open the door, and the bell striking mechanism will be inoperative; but if the bolt be moved in the other direction the latch cannot be shot back by turning the knob, but the bell striking mechanism is operated thereby to ring the bell.

The device is susceptible of many obvious uses. For example, it may be employed to prevent the entrance of any one from the outside while at the same time serving as an alarm to indicate the attempt at a surreptitious entrance; or, it may be employed as a door bell to summon the attendance of some one from within, or for many other manifest useful purposes.

It will also be manifest that the device may be applied to any of the ordinary and well known door locks in common use, and to doors of different thicknesses, it being necessary only to cut the spindle 4 to the proper length to correspond to the thickness of the door, the sleeve 14 being longitudinally adjustable thereon by means of the set screw 15.

Having described my invention, what I claim is—

1. The combination with a spring latch, of a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having rigidly secured thereon a toothed wheel, an escutcheon provided with a slotted boss, and a sliding bolt mounted on said hollow shaft and adapted to be alternately engaged with said slotted boss and toothed wheel, whereby said knob spindle and latch are thrown into and out of operative engagement, substantially as described.

2. The combination with a spring latch, of a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having rigidly secured thereon a toothed wheel, an escutcheon provided with a slotted boss, projecting ears carried by said hollow shaft, a sliding bolt seated between said ears and provided with an elongated slot, and a pin passing through said slot and secured in said ears, whereby said bolt may be caused to alternately engage said slotted boss and toothed wheel, to throw said latch and spindle into and out of operative engagement, substantially as described.

3. The combination with a spring latch, of a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having mounted thereon a longitudinally adjustable sleeve carrying a toothed wheel,

an escutcheon provided with a slotted boss, and a sliding bolt mounted on said hollow shaft and adapted to be alternately engaged with said slotted boss and toothed wheel, whereby said knob spindle and latch are thrown into and out of operative engagement, substantially as described.

4. The combination with a spring latch, of a hollow shaft for operating the same and carrying bell striking mechanism, a knob spindle passing through said hollow shaft and carrying a bell and a toothed wheel for actuating the bell striking mechanism, and means for throwing said hollow shaft and knob spindle into and out of operative engagement, substantially as described.

5. The combination with a spring latch, of a hollow shaft for operating the same and carrying bell striking mechanism, a knob spindle passing through said hollow shaft and carrying a bell and an actuator for the bell striking mechanism, and a sliding bolt mounted on the hollow shaft and adapted to throw said hollow shaft and knob spindle into and out of operative engagement, substantially as described.

6. The combination with a spring latch, of a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having mounted thereon a toothed wheel, an escutcheon provided with a slotted boss, a slotted disk rigidly affixed to said hollow shaft adjacent to said toothed wheel, bell striking mechanism carried by said disk and actuated by said toothed wheel, a bell sleeved upon the knob spindle, and a sliding bolt mounted on the hollow shaft and adapted to engage the slotted boss to lock the hollow shaft and disk against rotation whereby the latch and knob spindle are thrown out of operative connection when the knob spindle is turned and the bell is sounded, and to engage the slotted disk and toothed wheel to cause said disk and toothed wheel to rotate in unison when the knob is turned and simultaneously throw the bell striking mechanism out of operation and operate the latch, substantially as described.

7. The combination with a spring latch, of a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having mounted thereon a toothed wheel, an escutcheon provided with a slotted boss, a slotted disk rigidly affixed to said hollow shaft adjacent to said toothed wheel, bell striking mechanism carried by said disk and actuated by said toothed disk, a bell sleeved

upon the knob spindle, a slotted bolt seated between ears carried by the hollow shaft, and a pin passing through said ears and slotted bolt, said bolt being adapted to alternately engage the slotted boss and the slotted disk and toothed wheel, substantially as described and for the purpose specified.

8. The combination with a spring latch, a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having mounted thereon a toothed wheel and a bell, a slotted disk rigidly affixed to said hollow shaft adjacent to said toothed wheel, a hammer lever pivoted to said disk and carrying at its free end a hammer, a spring for throwing said hammer outward, a pivoted trip lever engaging the outer side of said hammer lever, a spring for throwing the free end of said trip lever into the path of the teeth of said toothed wheel, and a sliding bolt mounted on the hollow shaft and operating to throw said hollow shaft and disk and the toothed wheel into and out of operative engagement, substantially as described and for the purpose specified.

9. The combination with a spring latch, a hollow shaft for operating the same, a knob spindle passing through said hollow shaft and having mounted thereon a toothed wheel and a bell, a slotted disk rigidly affixed to said hollow shaft adjacent to said toothed wheel, two hammer levers pivoted to said disk and carrying at their free ends bell hammers, a spring for throwing said hammers outward, two pivoted trip levers each provided at one end with a hooked projection engaging the outer side of the adjacent hammer lever, a spring for throwing the free end of said trip levers into the path of the teeth of the toothed wheel, an escutcheon having a slotted boss, and a sliding bolt mounted on the hollow shaft and adapted to be moved in one direction to engage the slotted boss to throw the hollow shaft and knob spindle out of engagement and lock the said hollow shaft against rotation, and to be moved in the opposite direction to cause said hollow shaft, toothed wheel, and disk to rotate with the knob spindle substantially as described and for the purpose specified.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

CHARLES THEOPHILUS HOLMAN. [L. S.]

Witnesses:

LUTHER A. LEBERMAN,
T. H. APPLE.