

No. 703,187.

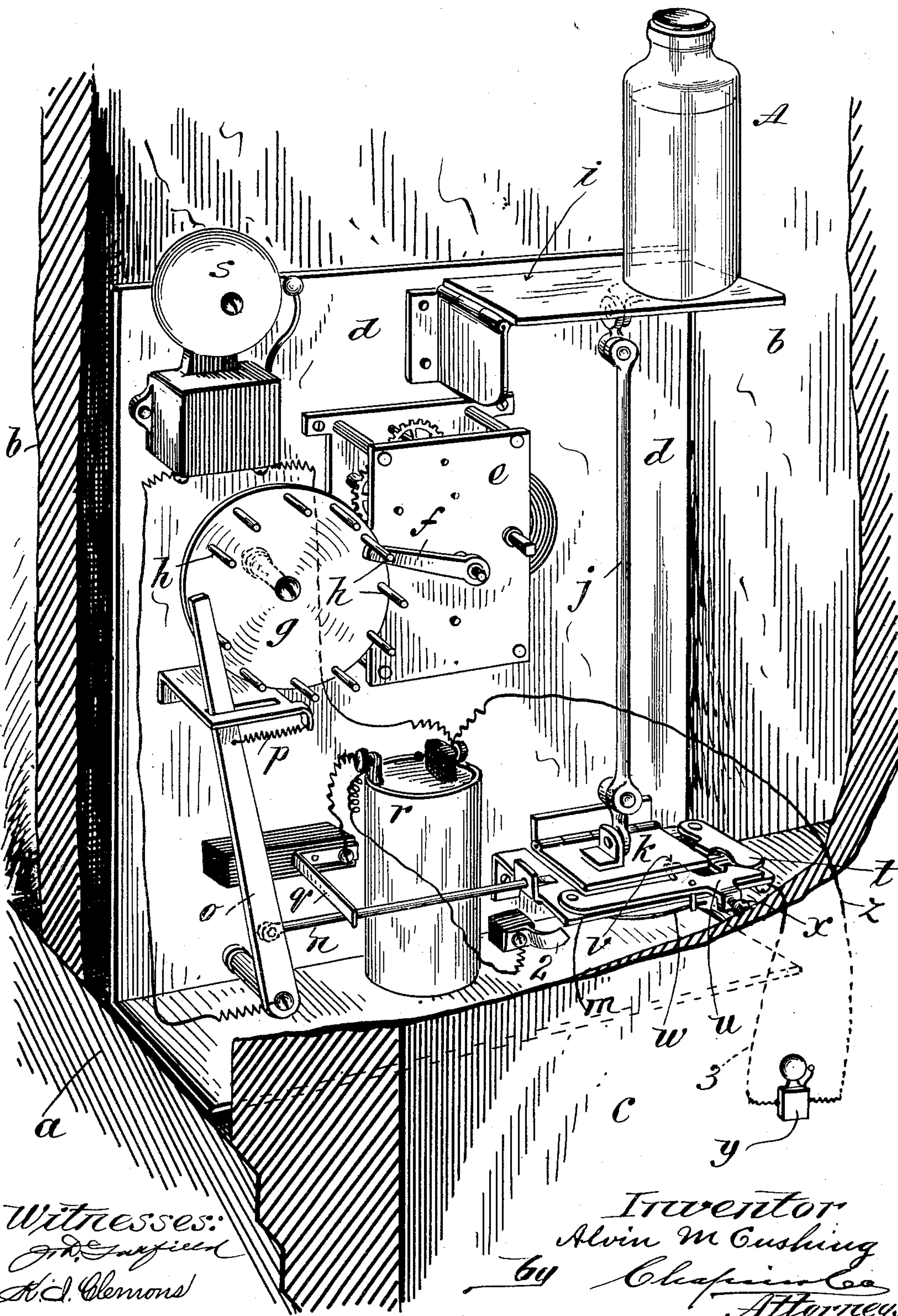
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A. M. CUSHING.

BURGLAR PROOF DEVICE FOR SAFE DOORS.

(Application filed Mar. 17, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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BURGLAR-PROOF DEVICE FOR SAFE-DOORS.

SPECIFICATION forming part of Letters Patent No. 703,187, dated June 24, 1902.

Application filed March 17, 1902. Serial No. 98,567. (No model.)

To all whom it may concern:

Be it known that I, ALVIN M. CUSHING, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Burglar-Proof Devices for Doors of Safes, of which the following is a specification.

This invention relates to devices for protecting safes or other depositories of valuable papers, &c., against robbery by the provision of devices set in operation by the opening of the door of the safe or other receptacle, whereby some noxious or strangulating gas is liberated, the escape of which makes it impossible for any one to remain in the immediate vicinity.

The object of this invention is to provide a construction of this character which is simple in its operation and construction and which is governed by a clock mechanism whereby it may be thrown out of action at a given time and associating with this time mechanism certain automatic alarms, all as more fully described in the following specification and carefully pointed out in the claims.

In the drawing, which consists of one perspective view shown in position inside of a safe, *a* may represent the wall of the safe, *b* the inner door, and *c* the outer door, only fragmentary portions of these parts of the safe being shown. Preferably the device is located, when applied to a safe or similar construction, between the inner door *b*, to which it may be attached, and the outer door *c*, although this particular location is not essential to its operation, for it may as well be located behind the inner door. As shown in the drawing, however, a base-plate *d* is secured against the outside of the inner safe-door, preferably, and on this plate is a suitable clock mechanism *e*, the arm *f* thereon representing the hour-hand. In proximity to this clock mechanism there is a wheel *g*, on which there are mounted pins *h*, projecting from one face thereof in lines parallel with the axis of said wheel, which pins are disposed at regular intervals around the edge of said wheel, the latter being located so that upon one revolution of the arm *f* around a clock-face said wheel *g* will be moved a distance representing the space between two

pins *h*—viz., each space will represent twelve hours.

At some convenient point there is pivotally supported a downwardly-swinging shelf *i*, which is normally held in a horizontal position by a rod *j*, extending from the under side of said shelf, with which it is pivotally connected, down to a second swing-shelf *k*, to which its lower end is pivotally connected, said shelf *k* being under certain conditions held rigidly in a horizontal position by means of devices to be hereinafter described. On said shelf *i* is placed a bottle or some fragile vessel for containing a noxious gas or volatile liquid, as spirits of ammonia, which bottle is indicated by *A*. Said shelf *k* is surrounded on the three sides thereof by a rectangular frame *m*, and the various devices whereby the shelf is supported in a horizontal position are supported on this frame and adapted to slide under the edge of said shelf. One of these devices consists of a horizontally-disposed rod *n*, pivotally connected to a swinging arm *o*, whose upper end bears against the pins *h*, being yieldingly held thereagainst by a conveniently-placed spring *p*. At one point in the circumference of the wheel *g* one pin is omitted, which will permit the arm *o*, when the wheel *g* arrives at the proper position, to swing in toward the axis of the wheel, and thereby push the end of the rod *n* in under the end of the shelf *k*, thereby preventing the latter from dropping downward. This is the means employed for at the proper time throwing out of action the mechanism, whereby otherwise the receptacle *A* might be dropped and the noxious gas be liberated by the opening of the safe in the regular course of business. On the wheel *g* the space between the pins represents twelve hours, and therefore to set the mechanism so that the rod *n* may be operated at any given time in the manner described it is only necessary to count back from the open space where one pin *h* is omitted, the number of pins representing the number of periods of twelve hours which are to elapse before the mechanism shall operate, and then rotating the wheel *g* until the last pin shall rest on the end of the arm *o*. This being done, it is obvious that at the lapse of the number of hours represented by the number of pins the wheel *g* will have been

rotated to a point which will bring the open space shown in the drawing just at the end of the arm *o* in such position that the operation of the last pin by the arm *f* will permit the spring *p* to throw the arm toward the center of the wheel *g* and push the rod *n* in under the shelf *k*. When this takes place, an electric circuit is closed by the contact of the arm *o* with the spring-arm *q*. From these two parts there is a suitable electric circuit, which includes a battery *r* and a bell *s*. Therefore the safe locking of the shelf *k* will ring the bell *s* and notify the person in attendance that the safe may be opened with impunity. A device must be provided, however, for holding the shelf *k* in inoperative position after the mechanism has been set and before the door of the safe is closed, together with means for throwing said device out of engagement with the shelf upon the closing of the door, and a supporting device of this character is provided by the swinging latch *t*, pivotally supported by one end on the frame *m* and having a portion thereof adapted to be swung under the edge of the shelf *k*. There is also supported on the frame *m* another pivoted latch *u*, having a portion thereof also adapted to swing under the edge of the shelf *k*, and the extremity of this member *u* is beveled off, as shown in the drawing, and is adapted to come to a bearing against the end of the latch *t*, when the first-named latch is swung toward the shelf *k* to engage the under side thereof and by a camming action force said latch *t* to one side; but just prior to the time that the latch *t* is disengaged from the under side of the shelf *k* a part *v* of the latch *u* slides under the front edge of said shelf. This movement of the latch *u* just described is effected by the contact of the door therewith in the act of shutting the latter, and the latch *u* is moved into said shelf-engaging position against the tension of a spring *w*. Preferably there is a screw *x* located in the edge of the latch *u*, against which the door *c* may swing to operate said latch, this screw providing means whereby the swinging movement of the latch *u* may be regulated by turning the screw in or out, as the case requires.

It is obvious from the foregoing description that if while the parts are in the position just described the door *c* is opened the spring *w* will throw the latch *u* out from under the shelf *k*, which by gravity will then fall, permitting the receptacle *A* to drop, thus breaking the same, whereby its noxious contents will perform their function. It becomes desirable when this occurs to ring an alarm-bell, which may be located either where a watchman or some other officer may hear it, whereby the fact will be signaled that the safe-door has been opened. This bell may be indicated by *y*, and from it one wire *z* may run to the battery, and from the latter another wire be run to a contact-point 2, properly insulated, against which the shelf *k* will

strike when it drops, a suitable wire connection 3 being connected with the shelf-support, which in this case is the base-plate *d*, and with said bell *y*, thus completing the circuit. Thus the operation of the time-lock may be made to ring the bell alone, and the operation of the shelf *k* may effect the ringing of the bell *y* alone.

It is obvious that the wires 3 and *z* would have to be carried through the walls of the safe and insulated therefrom wherever this device embodied in my invention is used on the inside of a safe.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with a door of a safe or the like, of a hinged shelf on which is supported a breakable receptacle containing a noxious substance, a movable device adapted to support said shelf, said device being held in shelf-engaging position by said door when the latter is closed, and means for disengaging said device from the shelf when the door is opened.

2. A burglar-proof attachment for safe-doors and the like comprising a hinged shelf on which is supported a breakable receptacle for containing a noxious substance, a latch held in contact with the door in engaging position relative to said shelf whereby, by the opening of the door, the shelf may be released to drop said receptacle, combined with an auxiliary sustaining-latch for said shelf, and a suitable clock mechanism associated with said latch, whereby the latter, at a predetermined time, may be moved into engagement with said shelf to render it inoperative.

3. The combination with a door of a safe or the like, of a hinged shelf on which is supported a breakable receptacle containing a noxious substance, a movable device adapted to support said shelf, said device being held in shelf-engaging position by said door when the latter is closed, a latch to sustain said shelf during the closing of the door and adapted to be engaged by said movable device and swung out of contact with the shelf, and a suitable spring for disengaging the said movable device from said shelf when the door is opened.

4. A burglar-proof attachment for safe-doors and the like comprising a hinged shelf on which is supported a breakable receptacle for containing a noxious substance, a latch held in contact with the door in engaging position relative to said shelf whereby, by the opening of the door, the shelf may be released to drop said receptacle, an electrical circuit having an alarm-bell therein, and means operable upon the release of said shelf to effect the ringing of said bell.

5. A burglar-proof attachment for safe-doors and the like comprising a hinged shelf on which is supported a breakable receptacle for containing a noxious substance, a latch held in contact with the door in engaging po-

sition relative to said shelf whereby, by the opening of the door, the shelf may be released to drop said receptacle, combined with an auxiliary sustaining-latch for said shelf,
5 and a suitable clock mechanism associated with said latch, whereby the latter, at a predetermined time, may be moved into engagement with said shelf to render it inoperative,

an electrical circuit having an alarm-bell therein, and means operable by the movement of said auxiliary latch to effect the ringing of said bell.

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