J. P. EVERTZ.

BURGLAR ALARM.

No. 184,705. Patented Nov. 28, 1876.

FIG. 1.

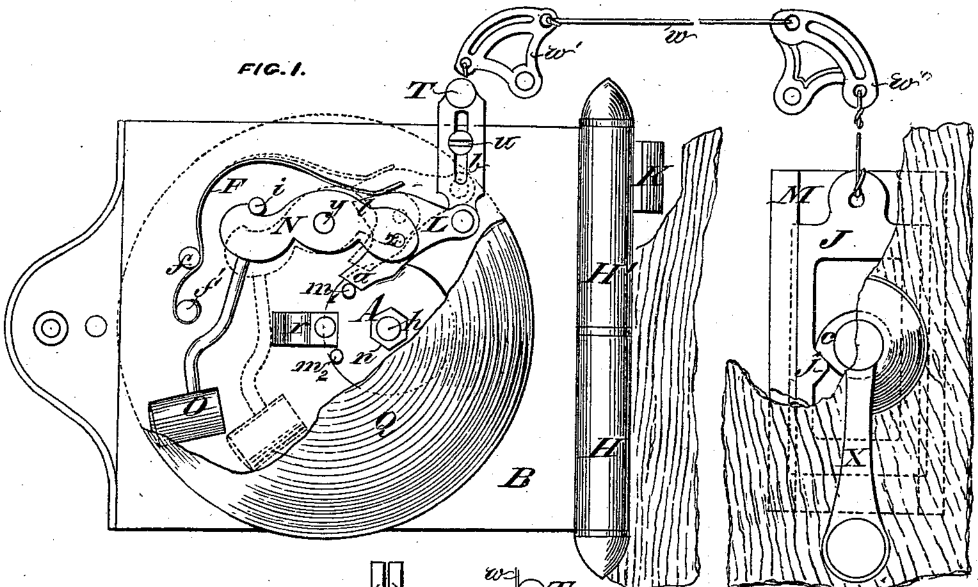


FIG. 2.

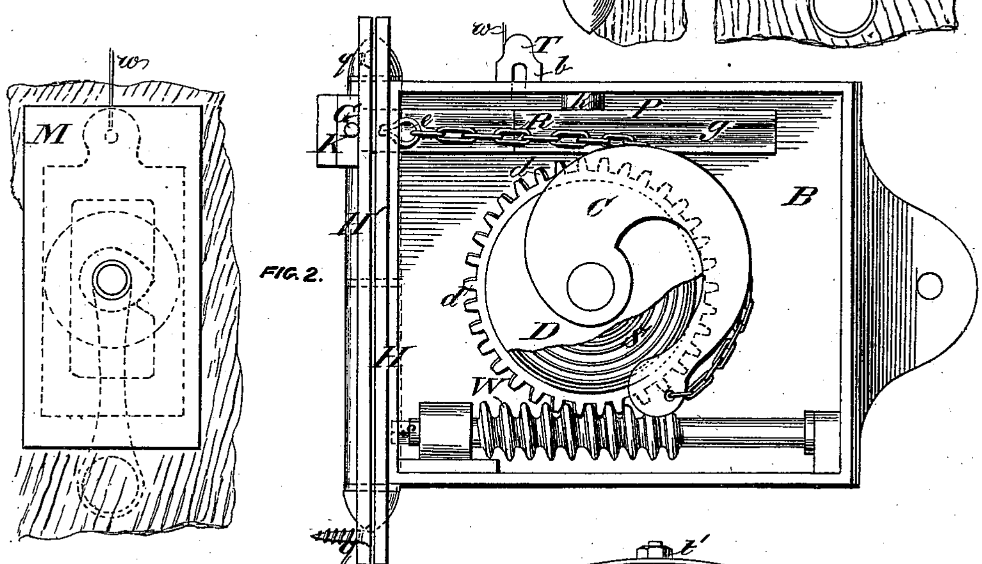
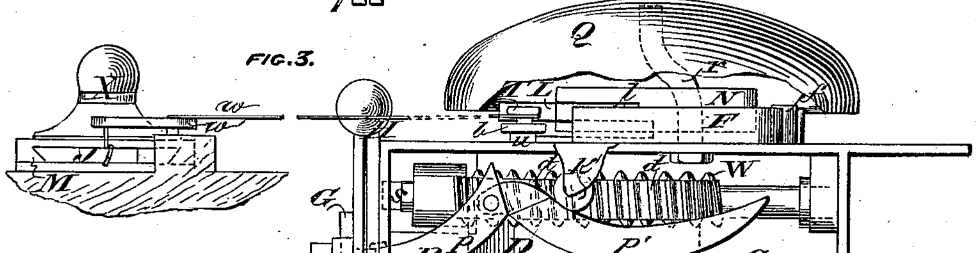


FIG. 3.



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UNITED STATES PATENT OFFICE.

JOHN P. EVERTZ, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN BURGLAR-ALARMS.

Specification forming part of Letters Patent No. **184,705**, dated November 28, 1876; application filed September 26, 1876.

To all whom it may concern:

Be it known that I, JOHN P. EVERTZ, a resident of the city and county of San Francisco, State of California, have invented a Combined Door-Hinge and Alarm Gong or Bell, of which the following is a specification:

My invention consists, essentially, of a door-hinge with attachment for ringing a gong or bell, on the door to which it is fastened being opened, and for automatically closing such door by an adjusted spring on its release; also, by additional mechanism, fitted either to this door or to any part of a building in which this door may be placed. This alarm may be rung in the usual manner by hand; the object of my invention being to cause the opening of office or other doors to automatically give an alarm, so as to be serviceable for business purposes, or to prevent burglaries, &c., and to make such doors self-closing. This I accomplish by fastening to that part of the hinge fitted to the door-frame a box containing a drum, with spring adjusted by a key to the proper tension, by said drum being provided with teeth which gear into a worm or its equivalent. To the rim of an eccentric attachment on this drum a chain is fastened, so as to be secured to the other hinge-flap, fitted to the door itself by an eye provided on a curved folding piece in such manner that as the door is opened this chain will gradually leave the eccentric rim, and follow a groove arranged therefor on this folding piece attached to the door-flap, while said piece, by bending into various angles on emerging from this box, in order to adapt itself to the several positions required, allows of the chain being retained on it, and withdrawn also from the box to the full extent the door is opened, thus insuring the entire force of the adjusted spring within the drum for automatically closing the door. For ringing the bell while the door is thus being opened, a disk, provided with one or more catches or pins, is adjusted outside of the box into any position required on the projecting spindle of this spring-drum. These catches, on the revolution of the drum, actuate a compound lever, governed by a spring, to which lever a bell-hammer, for striking a fixed gong or bell, is attached; also, to this lever a sliding knob is fitted, so that by adjusting such knob and lever the disk, provided with catch-pins, may revolve without coming in contact therewith, thereby causing the bell to be silent on the opening and closing of the door, when desirable. By an attachment also of ordinary bell-wire connections to this knob, the bell may be rung by a crank-handle, fitted with a cam, so as to engage a sliding plate to which the last connection is made; and this arrangement may either be secured to the center of the door itself, or to any part of a building in which such door may be placed.

Figure 1 is a front view, or vertical longitudinal elevation, of the combined door-hinge and alarm-bell, with crank attachment and connections, embodying my invention, wherein the position of the mechanism about to strike an alarm is shown in dotted lines, the door being supposed partially open. Fig. 2 is a rear vertical elevation of Fig. 1 with box-plate removed, so as to exhibit the interior details. Fig. 3 is a plan of the same with top removed.

With reference to the drawings, B is a box, fitted to one flap, H, of an ordinary door-hinge by screws *q q*. Within this box B is a drum, D, containing a spiral spring, S, and on the outer rim of this drum D are teeth *d*, which gear into a worm, W, this drum, spring, and worm being so arranged that, by the turning round in a positive direction of the projecting spindle *s* of this worm, the spring S may be wound up and adjusted to the desired tension. C is an eccentric cam or arm, attached to the drum D, and on this cam a chain or rope, R, is secured at one end, so as to fit to the rim *o* of this cam. The other end of this chain R is fastened to an eye, *e*, fitted to a curved metallic piece, P, which consists of two arms, *p p'*, joined together by a knuckle-joint, and arranged to double and fold up onto one another when made to assume various positions within this box B. This folding piece P is provided with a groove, *g*, for receiving and retaining the chain R, and with a head, K, for its adjustment by a pin, G, to an aperture provided for it in the door-hinge flap H', so that as the door is pushed open this folding piece P from being partially doubled up will gradually be withdrawn from the box, and assume the form of a continuous curve, with the chain R resting within its groove *g*, while this chain R

will, during such movement, actuate the cam C, and, consequently, receive the full force of the tension of the spring within the drum D, thereby insuring the closing of the door with the full force to which this spring has been adjusted on the release of the same. On the outer plate of the box B, and on the projecting threaded portion of the spindle *h* of the drum D, a disk, A, is adjusted by a nut, *n*. This disk is provided with or more projecting pin-catches, m^1 m^2, so arranged as to meet the end *a* of a lever, L, fitted by a pin, *z*, to another lever, N, pivoted at *y*, and carrying an ordinary bell-hammer, O, for the purpose of striking a gong or bell, Q, adjusted to a bracket, *r*, on this outer plate of the box B by a nut *t'*. This compound lever L N is governed in its movements when actuated by the revolution of the disk carrying the pins m^1 m^2, by a spring, F, fitted between pins *f f'*, and pressing near the stop end of the lever L; and the hammer-lever N is limited in its upward movement by a pin-stop, *i*. By this arrangement, when a door fitted with this attachment is opened, as described, the pin m^1 may be made to immediately actuate the hammer on the gong, or may be so adjusted as to allow of the door being about half opened before sounding an alarm, and the second pin m^2, on following, may be also made to give a second ring when the door is about half or fully opened, as may be desired; also, for the guidance of the folding-piece P, with chain attachment R, in its movement on entering or emerging from the box B, a fixed pin, *k*, is arranged in a suitable position on the top cover of the box.

For allowing of an alarm being sounded by a centrally-placed crank-handle attachment to the door, such as is now in general use, or for making a connection to this bell mechanism from one or more rooms in a building, a knob, T, provided with a slotted slide-piece, *b*, forming together a latch, is attached to the lever L, so as to slide on and fit to a pin, *u*, fixed to the outer box-plate. To this knob T ordinary bell-wire connections and bent levers *w* w^1 are fastened, and also secured to such parts of a building as may be necessary, the last connection being attached to a slotted plate, J, provided with tooth *j*, and arranged to slide downward within a frame, M, when actuated by a cam, *c*, fitted to the spindle of such crank attachment X, engaging this tooth *j*, and, to return or slide upward by the return action of the spring F on the lever L and latch T *b*. For silencing the bell, while still preserving the full force of the adjusted spring S for closing the door, the latch T *b* is pressed downward, so as to throw the lower portion of the lever L out of the way of the pin-catches m^1 m^2.

I claim as my invention—

1. The combined door-hinge and alarm-bell described, consisting of the toothed drum D *d*, with adjustable spring S, worm W *s*, or its equivalent, cam-arm C, and folding piece P, fitted to the door-hinge flap H', and provided with connection R to the cam C; also, the guide-pin *k*, adjustable disk A, provided with catch-pins m^1 m^2, and fitted to the projecting drum-spindle *h*, arranged for actuating the combined lever L N, with spring F, and hammer O for striking the fixed gong Q, as herein shown and constructed, substantially as and for the purposes herein set forth and specified.

2. The drum D *d*, provided with spring S, arm C, and adjusting-worm W *s*, or its equivalent, fitted to a door-frame by hinge-flap H, in combination with a door-hinge flap, H', provided with folding piece P, or its equivalent, and drum-connection R, substantially as and for the purposes herein set forth and specified.

3. The stop knob and slide T *b*, fitted to the fixed pin *u* on the box B, in combination with the lever L *l*, spring F, and hammer-lever N, substantially as and for the purposes herein set forth and specified.

4. The knob-slide T *b*, attached to the lever L N, fitted with hammer O, and connected by wire connections *w w'* to the sliding slotted plate J *j*, in combination with the handle, fitted with cam X *c*, spring F, and fixed gong Q, all arranged as herein shown and set forth, substantially as and for the purposes specified.

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Witnesses:
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