(Model.)

C. A. SMITH.

DOOR ALARM.

No. 262,490. Patented Aug. 8, 1882.

Fig. 1.

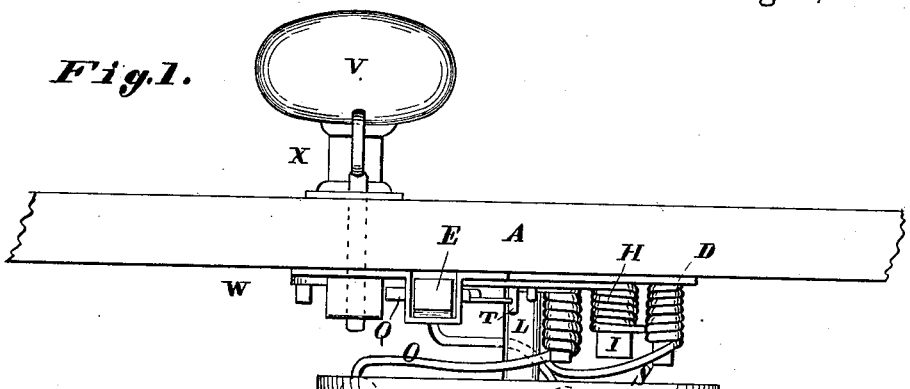


Fig. 2.

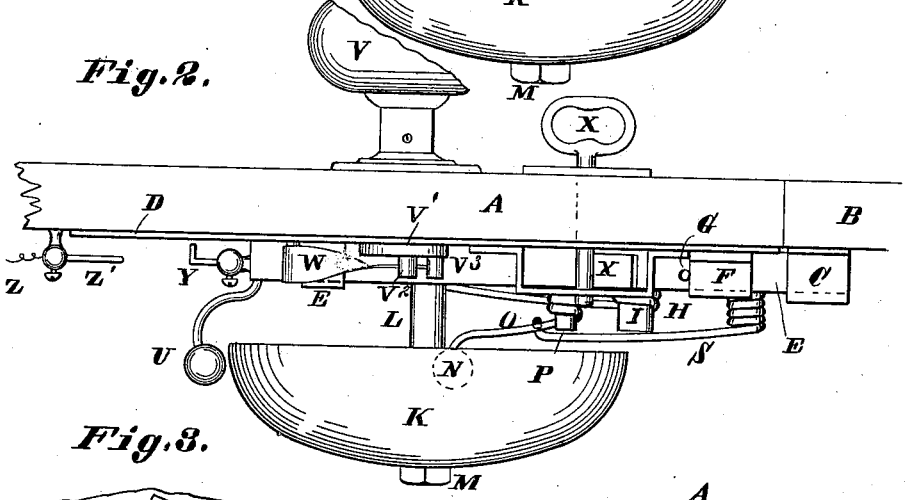
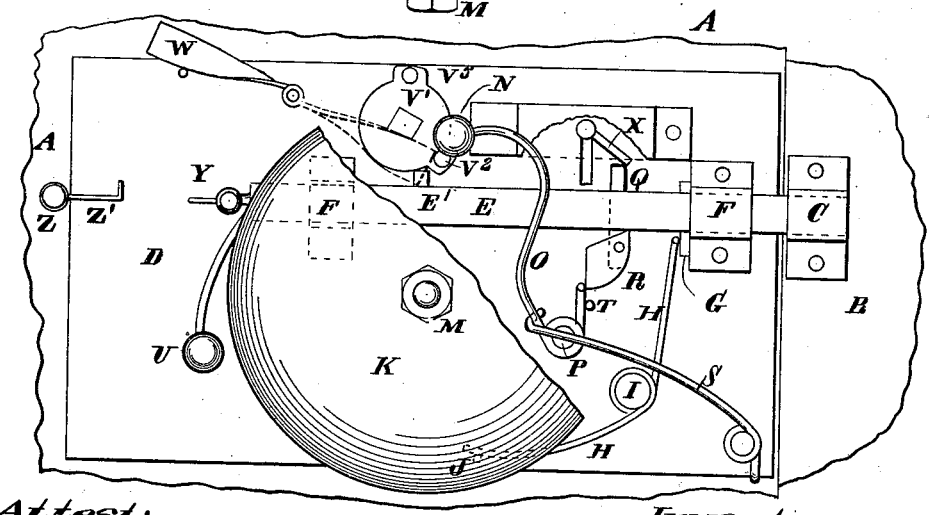


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES A. SMITH, OF ST. LOUIS, MISSOURI.

DOOR-ALARM.

SPECIFICATION forming part of Letters Patent No. 262,490, dated August 8, 1882.

Application filed June 9, 1882. (Model.)

To all whom it may concern:

Be it known that I, CHARLES A. SMITH, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Door-Alarms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is an end view; Fig. 2, a side view, and Fig. 3 a front view.

My invention relates to an alarm operated on by a sliding bolt worked by either a knob or key.

A represents part of a door, and B the front wall of the frame, to which is attached the keeper C for receiving the end of the sliding bolt.

D is a plate secured to the inside of the door, to which the bell and its parts are attached.

E is the sliding bolt, secured to the plate D by straps F, which allow it to have free end movement.

G is a transverse pin passing through the bolt, its ends protruding to engage with the front strap, F, to limit the forward movement of the bolt under the influence of a spring, H, which surrounds a post, I, and its ends bearing respectively against the pin G and a stud, J. Thus the normal position of the bolt is in engagement with the keeper C.

K is the bell or gong, connected to the plate D by a post, L, and nut M.

N is a hammer, with a stem, O, which surrounds a post, P.

Q is a short bar or pin passing transversely through the bolt E, and having pivoted to its lower end a swinging cam, R. When the bolt E is forced back the lower corner of this cam R comes against the upturned end of the stem O—the upper corner of the cam coming against the lower edge of the bolt, as shown, so that the cam will not swing backward—which will force the hammer away from the edge of the bell. Then when the end of the stem slips off the cam the hammer will be drawn back by a spring, S, and strike the edge of the bell, giving an alarm. The backward movement of the hammer is limited by a pin, T. Then when the bolt is released it will move forward under the influence of the spring H, the lower end of the cam R swing forward, and, passing over the end of the stem O, the bell will again be rung by a hammer, U, secured to the back end of the bolt E. The bolt can be operated either by the door-knob or by a key, and, if desired, the knob can be locked and the bolt operated by the key alone.

V′ is a tumbler, which is on and is turned by the shank of the knob V. On this tumbler are pins V^2 V^3, which, as the knob is turned, come in contact with a pin or stud, E′, on the top of the bolt E, moving the bolt endwise, disengaging it from the keeper C, and operating the hammer N. When the hammer N has been operated the bolt will have been disengaged from the keeper, but the pin V^2 or V^3 will not have left the pin E′, so that then is the proper time for the door to be opened; but one who is not accustomed to the device—as a burglar, for instance—would naturally turn the knob until the pin V^2 is disengaged from the pin E′, and then the bolt will be moved forward and engaged with the keeper again before the door can be opened, operating the hammer U, which has the function of giving a second alarm when the door is opened and the knob released, or when the knob has been turned too far by one not accustomed to the device.

The knob can be locked from turning by throwing over a plate, W, which would engage with one of the pins V^2 V^3. When the knob is thus locked, or at any other time, the bolt may be operated by a key, X, which comes against the upper end of the pin Q. The key-hole is placed forward of the pin Q, so that the key has a long bearing upon the pin.

Electricity may be used and the alarm turned into a jingle-bell by means of an arm, Y, on the end of the bolt E, and an arm, Z′, supported by a post, Z. Thus when the bolt is moved back the arms would come together, connecting the circuit and vibrating the arm U.

I claim as my invention—

1. The combination of sliding bolt E, pin G, spring H, bar Q, swinging cam R, ham-

mer N O, spring S, bell K, and suitable knob or key for operating the bolt, as set forth.

2. The combination of knob V, tumbler V′, with pins V^2 V^3, sliding bolt E, secured to the plate F and having pin or stud E^2, hammer U, bar Q, cam R, pin G, keeper C, spring H, hammer N O, spring S, and bell K, all made substantially as and for the purpose set forth.

CHARLES A. SMITH.

Witnesses:
SAML. KNIGHT,
GEO. H. KNIGHT.