(No Model.) 3 Sheets—Sheet 1.

A. W. THOMAS & G. W. WAY.

BURGLAR ALARM.

No. 336,449. Patented Feb. 16, 1886.

Fig. I.

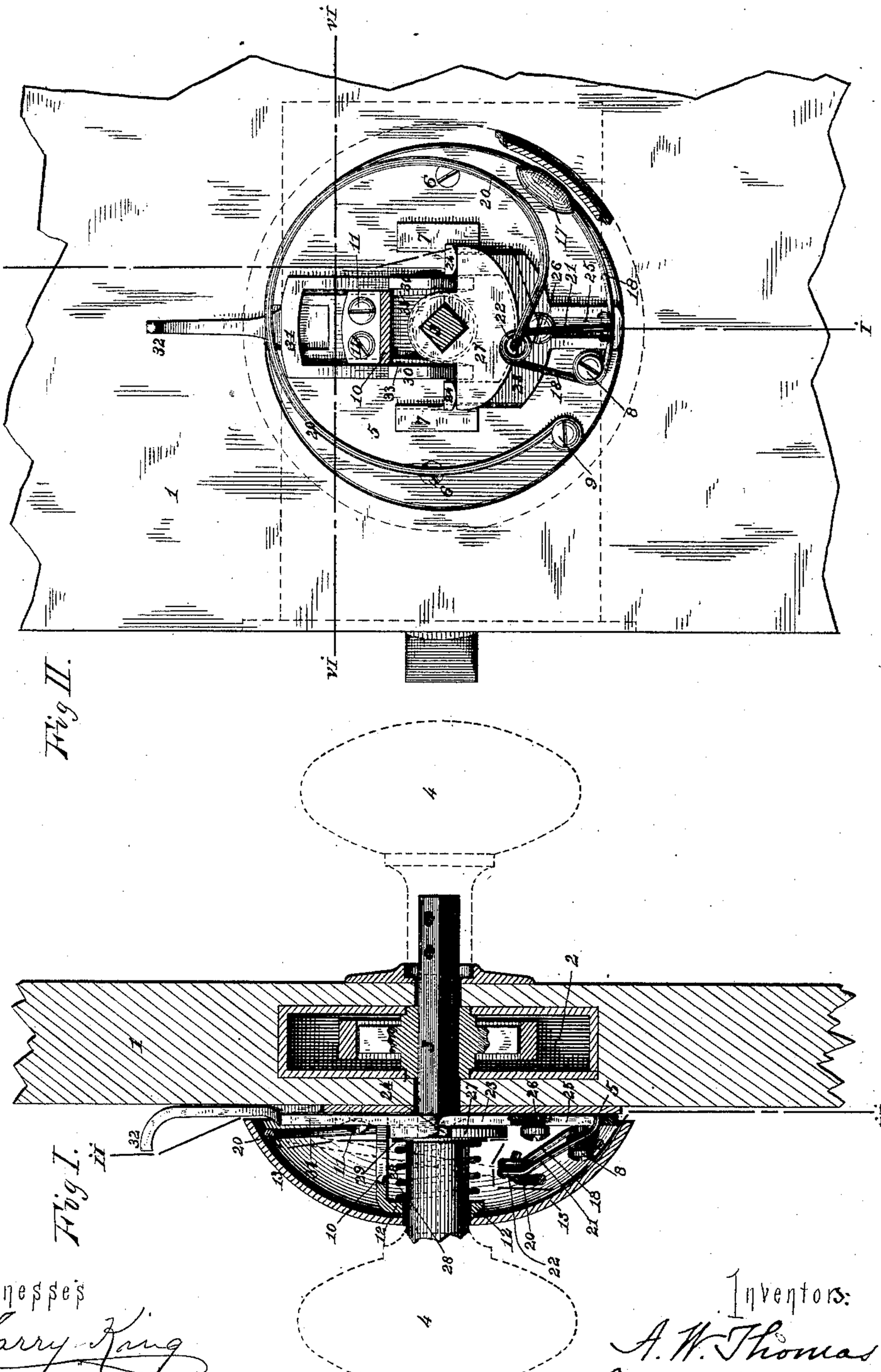

Fig. II.

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(No Model.) 3 Sheets—Sheet 2.

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Fig V.

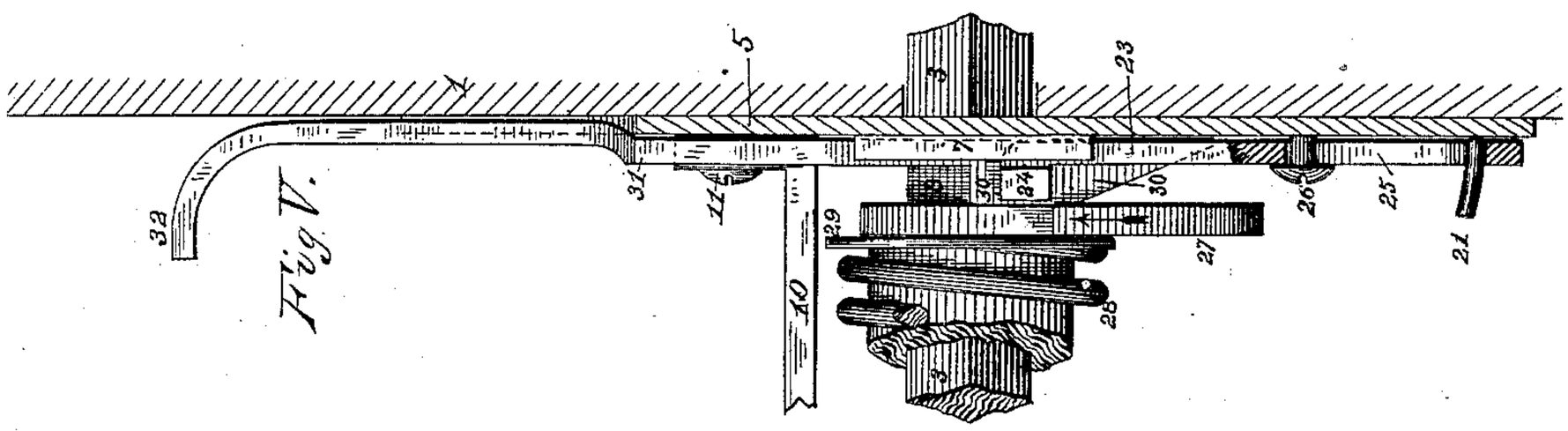


Fig IV.

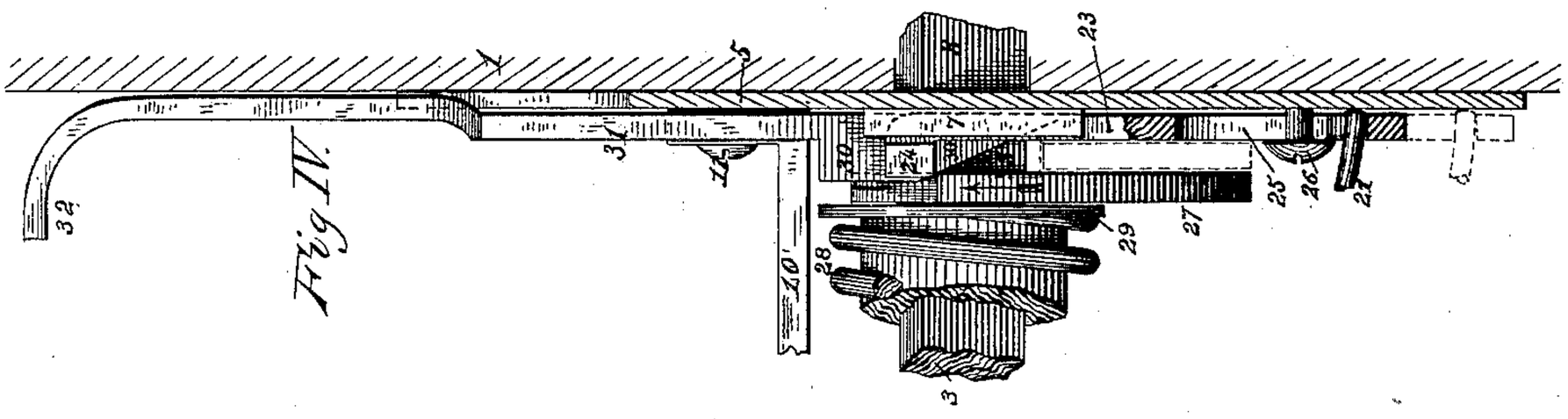
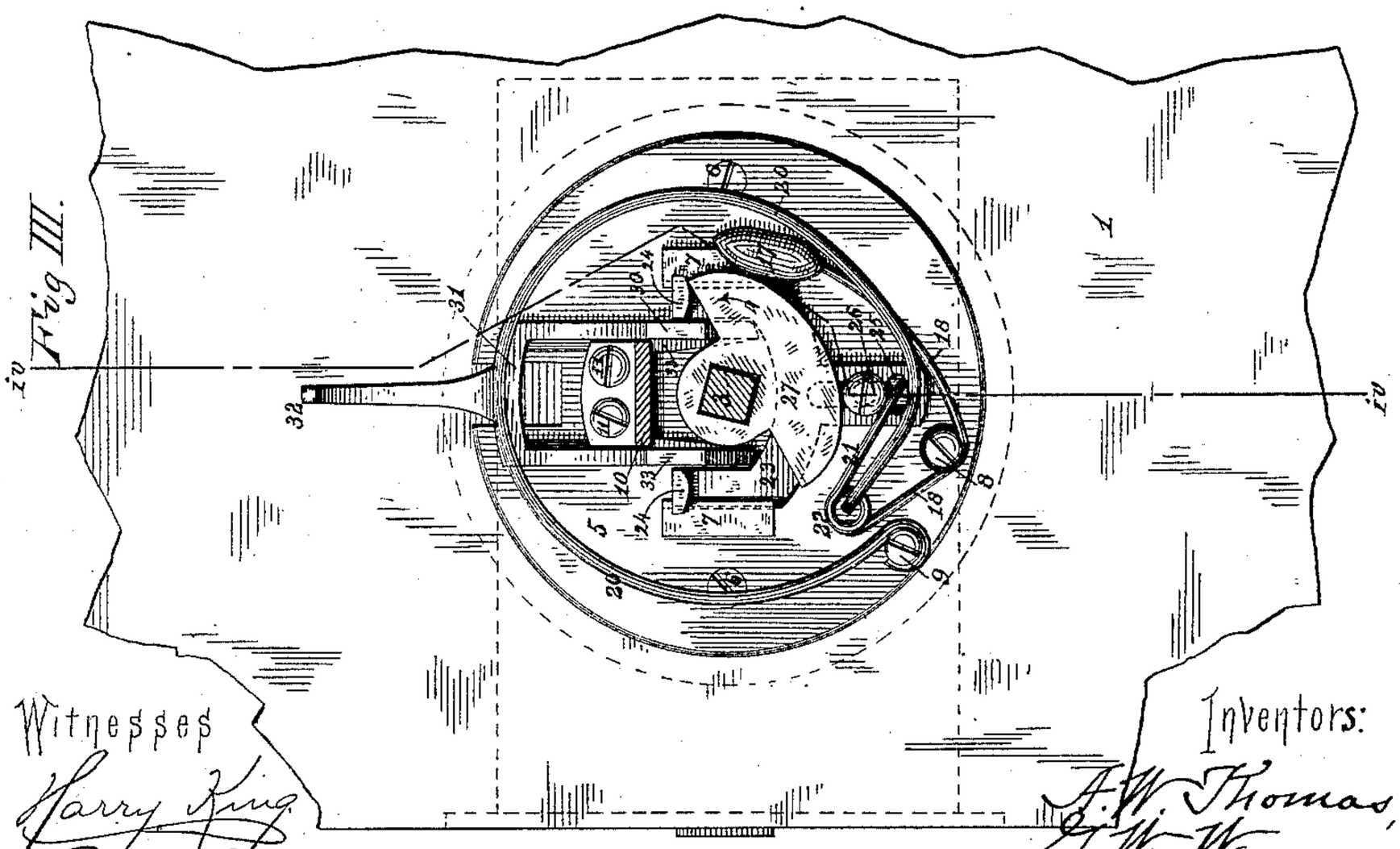


Fig III.



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BURGLAR ALARM.

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Fig VII

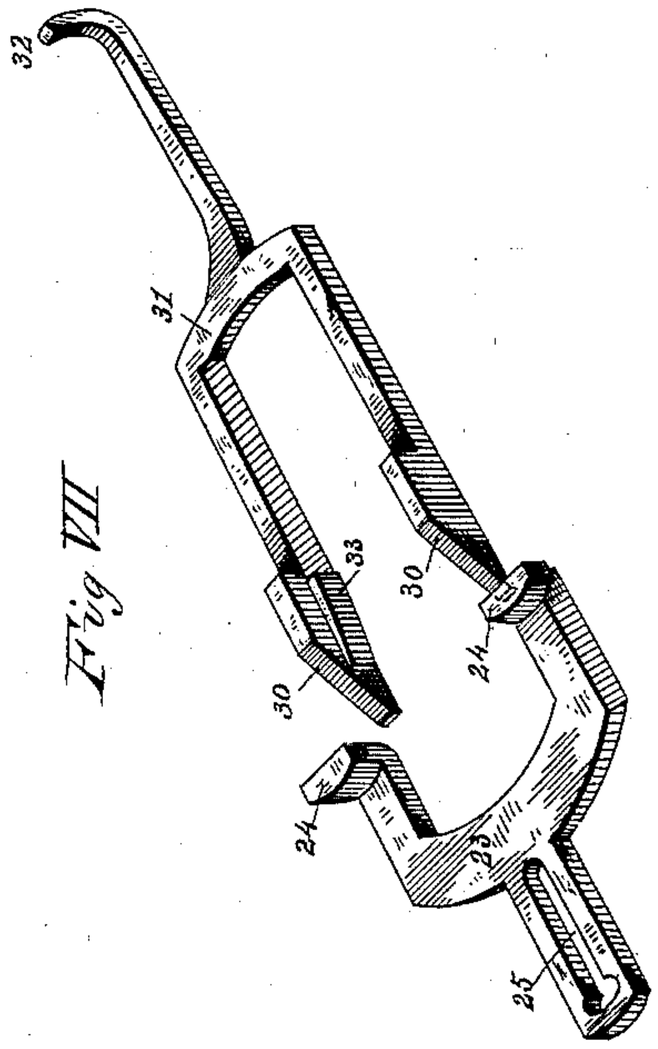
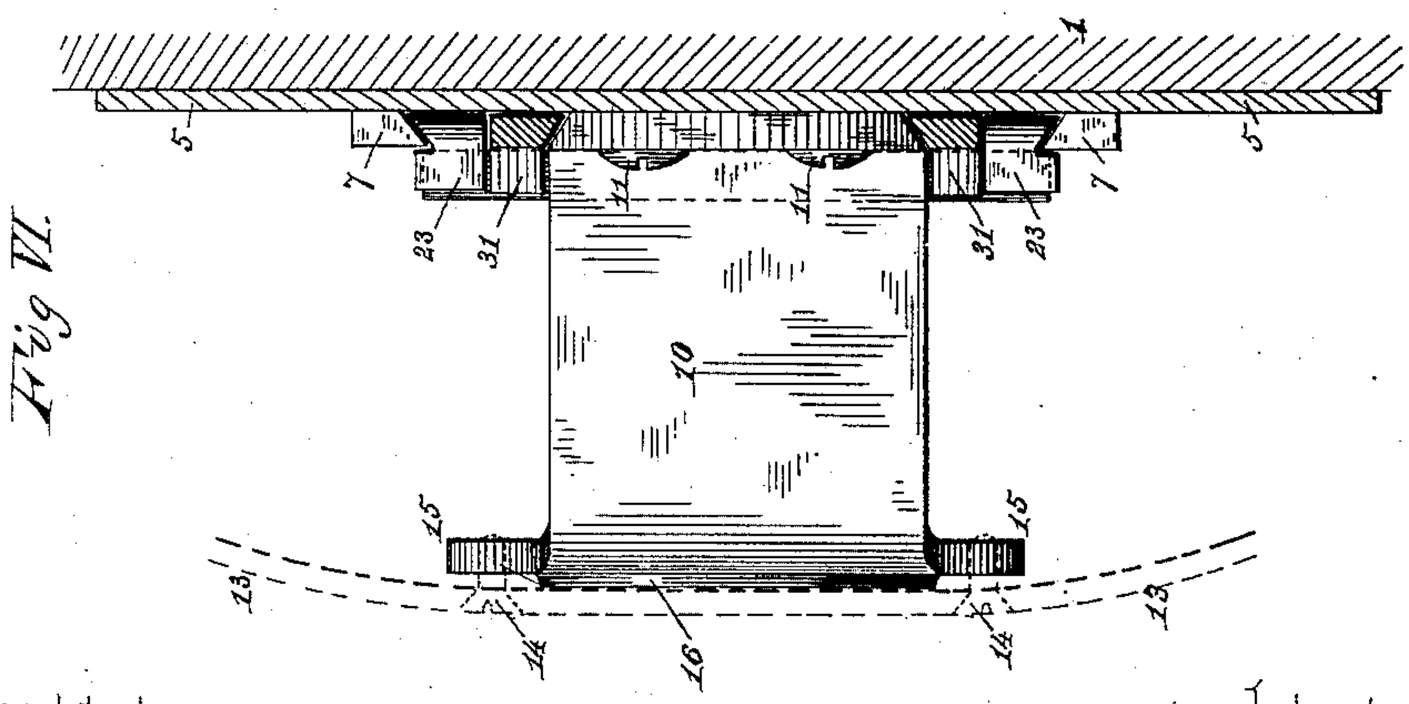


Fig VI.



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UNITED STATES PATENT OFFICE.

ALLEN WINDSOR THOMAS AND GEORGE WELLS WAY, OF PORTLAND, ME.

BURGLAR-ALARM.

SPECIFICATION forming part of Letters Patent No. 336,449, dated February 16, 1886.

Application filed December 17, 1885. Serial No. 185,901. (No model.)

To all whom it may concern:

Be it known that we, ALLEN WINDSOR THOMAS and GEORGE WELLS WAY, citizens of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in a Combined Door-Bell and Burglar-Alarm, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a device to be applied to the inner face of a door, and to be connected with the knob-spindle of the door lock or latch in such a manner that the turning of the door-knob will sound a bell, which may thus serve the purpose of an ordinary door-bell, and also as a burglar-alarm, and, when applied to the door of a sleeping-room, as a waking-signal.

The object of the invention is to provide a device of this character combining the properties of simplicity and economy of construction, facility of application, certainty of operation, and durability.

Figure I of the accompanying drawings is a diametrical section on line *ii* of Fig. II of this combined door-bell and burglar-alarm applied to a door, the parts of the striking and actuating mechanisms being in their normal relative positions. Fig. II is a face view of the same, partly in section, with the bell removed, the parts being in the same relative positions as in Fig. I. Fig. III is also a face view, partly in section, cut through on the same plane as Fig. II, omitting the bell, and showing the parts of the striking and actuating mechanisms in the relative positions which they assume when the door-knob is turned sufficiently to draw back the bell-hammer preparatory to the striking of the bell. Fig. IV is a partial transverse section, enlarged, on line *iv iv* of Fig. III, the parts illustrated being in the same relative positions as in Fig. III. Fig. V is a transverse section similar to that shown in Fig. IV, illustrating positions of certain parts when the device is so adjusted that the turning of the door-knob will not sound the bell. Fig. VI is an enlarged section on line *vi vi* of Fig. I. Fig. VII is a perspective view of certain parts of the device.

Similar numerals indicate corresponding parts in the different figures.

This combined door-bell and burglar-alarm is illustrated as applied to an ordinary door, 1, which is provided with an ordinary knob latch or lock, 2, having the knob-spindle 3, to which the door-knobs 4 4 are applied.

The main supporting-plate 5 of this improved device is preferably circular in form, and is designed to be attached to the inner face of the door by means of screws 6 6 or otherwise. This plate is provided with a central opening, through which the knob-spindle passes, and on opposite sides of said opening, at equal distances therefrom, with two parallel guideways, 7 7, and with a fixed stud or pivot-post, S, near its lower edge. The guideways 7 7 are beveled or grooved on their inner faces. A bracket, 10, for supporting the bell, is attached to the plate 5 by means of screws 11. This bracket is provided with a ring, 12, which surrounds the shank of the knob, and to which the bell 13 is secured by means of screws 14, which pass through the bell and take into screw-threaded ears 15, projecting from said ring. The foot-plate of the bracket 10 is beveled on opposite edges, as shown in Fig. VI. The ring 12 has a raised rim, 16, against which the bell rests. The bell 13 is an ordinary gong-bell, provided with a central opening, through which the knob-spindle passes, and with screw-holes on opposite sides of said opening for the securing-screws 14. The inner face of the rim 16 is preferably flush with the central opening of the bell. By means of this rim the bearing-surface of the bell is reduced to a minimum, whereby the vibrations of the latter are not interfered with. The bell-hammer 17 is attached to a bent hammer-lever, 18, which is pivoted to the pivot-post 8 of the plate 5. The hammer in its normal position is adjacent to the inner circumference of the bell 13. A band or wire spring, 20, is attached at one end by the screw 9, or otherwise, to the plate 5, and, passing around within the inner circumference of the bell, is connected to the hammer-lever 18, and by its expansive force tends to swing the latter, and thereby to throw out the hammer and cause it to strike the bell. An arm, 21, extends from the inner end of the hammer-lever 18 outward toward the periphery of the attaching-plate 5. This arm and the hammer-lever are preferably composed of a single piece

of wire, bent as required, and coiled around the stud 8, and having a coiled eye, 22, at the point where the actuating-spring 20 is connected therewith. A slide-plate, 23, serves to actuate the arm 21 for drawing back the hammer and for holding the latter in its normal position. This plate 23 is beveled on its opposite edges, and is adapted to slide on the plate 5, between the ways 7 thereon. The said plate is forked and straddles the knob-spindle, its forked inner ends being provided on opposite sides of said spindle with lugs 24. The forward extension of this plate is provided with a guide-slot, 25. A screw, 26, passes through the slot 25 into the plate 5, and serves to hold the slide on the latter plate, and also serves as a stop for said slide. The outer end of the arm 21, which constitutes an extension of the hammer-lever, extends into the slot 25 of the slide 23, and, pressing against the slide at the outer end of the slot, tends to push out said slide against the stop-screw 26. The plate 5 is provided with two or more holes for the stop-screw 26, whereby the latter may be adjusted to regulate the movement of the slide-plate. A segmental oscillatory plate, 27, provided with a square opening, through which the knob-spindle passes, is placed over the slide 23, and when the knob is turned in either direction the segmental plate is oscillated and engages one of the lugs 24 on said slide-plate and retracts the latter. The segmental plate is held in contact with the slide-plate by means of a spiral spring, 28, interposed between said segmental plate and the ring 12 of the bracket 10. A collar, 29, may be interposed between the inner end of the spring and the outer face of the plate. Inclined cams 30 are arranged adjacent to the lugs 24 of the slide-plate 23, and as the segmental plate 27 is oscillated it rides out on one of these cams until it is disengaged from the lug of the slide-plate, which, being then released, is returned to its normal position by the arm 21 through the action of the spring 20 on the hammer-lever 18, to which the bell-hammer 17 is attached. These inclined cams are preferably adjustable in such a manner as to hold the oscillating plate out of contact with the lugs when it is desired to adjust the device so that the knob may be turned without ringing the bell. As shown, the lugs 30 are attached to a fork, 31, which is adapted to slide on the attaching-plate 5, the inner faces of the tines being beveled to fit the beveled footplate of the bracket 10, whereby the fork is held in contact with the attaching-plate 5. This fork is provided with a stop, 33, which engages the bracket 10, and with an out-turned handle, 32, which extends beyond the periphery of the bell, whereby the fork may be readily pushed in or drawn out to place the bell-striking mechanism in operative connection with the knob-spindle or to disconnect it therefrom.

The device being in operative connection with the knob-spindle, the operation is as follows: As the knob is turned to release the latch for opening the door, the segmental plate 27 is oscillated in either direction and engages one of the lugs 24 on the slide 23. This movement of the segmental plate in engagement with a lug, 24, retracts the slide 23 until the segmental plate is raised out of contact with the lug by one of the cams 30. The retraction of the slide draws inward the arm 21, which latter swings the hammer-lever 18 on its pivot against the tension of the spring 20 and draws back the hammer ready for the delivery of a blow upon the bell. As the lug 24 is disengaged from the segmental plate 27, the slide-plate 23, and consequently the arm 20 and hammer-lever 18, is released from the action of the segmental plate. The spring 20 then swings the hammer-lever on its pivot-post 8 and causes the hammer 17 to strike the bell. This movement of the hammer-lever causes the arm 21 to push out the slide-plate 23 into position to be again acted upon by the segmental plate 27 when the knob is again turned. The outward movement of the slide-plate is arrested by the stop-screw 26 before the hammer reaches the bell, the hammer-lever being sufficiently elastic to permit the hammer to strike the bell in the usual manner.

The advantages of this improved door-alarm are, that its parts are few and simple and not liable to get out of order, and that it can be readily applied to any door.

We claim as our invention—

1. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate engaged by said segmental plate, and a cam for disengaging said segmental plate from said slide-plate.

2. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate engaged by said segmental plate, a cam for disengaging said segmental plate from said slide-plate, and a spring for holding said segmental plate in contact with said slide-plate.

3. The combination, substantially as set forth, of a bell, a striking mechanism therefor, a rectilinear reciprocatory slide for retracting said mechanism, an oscillatory plate engaging said slide and actuated by the knob-spindle, cams for disengaging said plate from said slide during the turning of the knob, and a spring for returning said slide to its normal position after disengagement.

4. The combination, substantially as set forth, of a bell, a pivoted hammer-lever, a spring connected to said hammer-lever for actuating it, a reciprocatory slide for drawing back said hammer-lever against the tension of the actuating-spring, an arm connecting said hammer-lever with said slide, and an oscillatory plate engaging said slide and actuated by the knob-spindle.

5. The combination, substantially as set forth, of an attaching-plate, a slide-plate guided thereon and provided with lugs, an oscillatory plate actuated by the knob-spindle and

adapted to engage one of said lugs when the knob is turned in either direction, a bell, and a striking mechanism therefor connected with said slide.

6. The combination, substantially as set forth, of a supporting-plate provided with beveled guideways, a slide reciprocating in said guideways, an oscillating plate engaging said slide and actuated by the knob-spindle, a bracket attached to said plate, a bell supported by said bracket, and a bell-striking mechanism connected with said slide.

7. The combination, substantially as set forth, of the attaching-plate 5, the bracket 10, provided with the ring 12, having a raised rim, 16, and a gong-bell resting on said raised rim.

8. The combination, substantially as set forth, of a segmental plate actuated by a knob-spindle, a slide-plate provided with lugs, and an adjustable fork carrying cams, the position of which limits the duration of or completely prevents the engagement of said segmental plate with said lugs.

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