

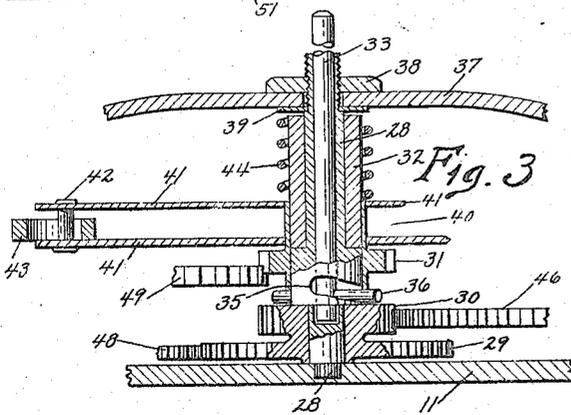
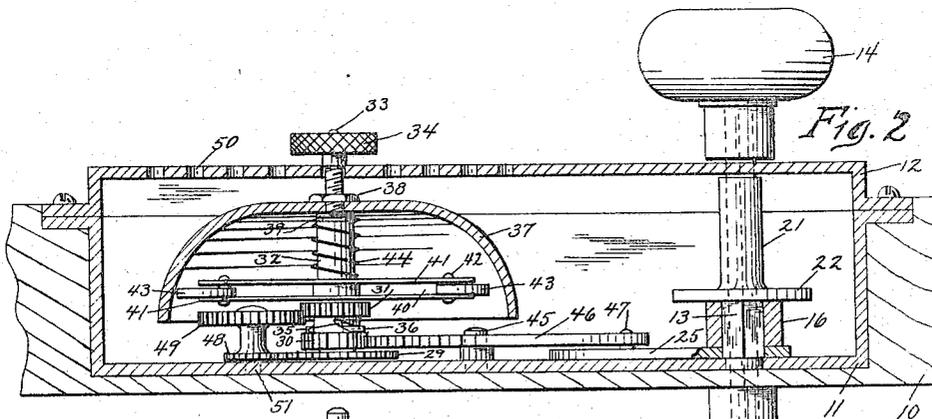
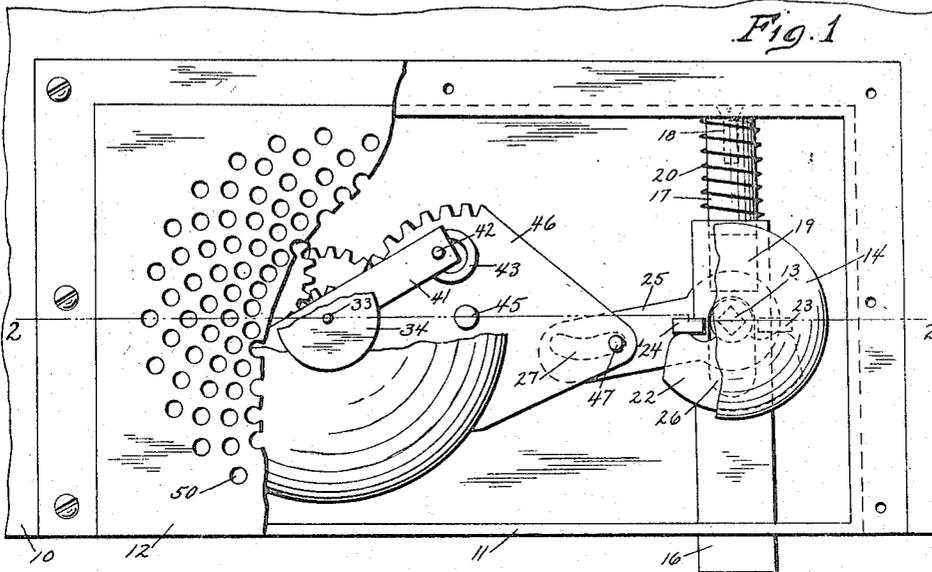
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ALARM MECHANISM

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UNITED STATES PATENT OFFICE.

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ALARM MECHANISM.

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To all whom it may concern:

Be it known that I, ANDRU G. PAPPADAKIS, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Alarm Mechanisms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a new and improved alarm mechanism, referring particularly to that type of such mechanism as is applied to a door to sound an alarm when the knob is rotated.

It is the object of this invention, among other things, to provide a simple and effectual device of this character that is self-contained and so arranged that by manipulation of some of the parts thereof the alarm will sound or not, as desired, and in general, to make the mechanism of such simple design that it may be economically constructed and readily assembled.

To these, and other ends, my invention consists in the alarm mechanism, having certain details of construction and combinations of parts as will be hereinafter described and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals of reference designate like parts in the several figures;

Figure 1 is a view of my improved alarm mechanism as applied to a door lock and shown partly in section;

Figure 2 is a sectional view thereof, taken generally upon line 2—2 of Figure 1; and

Figure 3 is an enlarged detail view, partly in section, of the bell post and adjacent parts.

Referring to the drawings, 10 designates a portion of a door; 11 a lock case fixed therein; 12 the cover therefor; 13 a knob spindle rotatably mounted in both the case and cover, as is usual; 14 and 15 the inner and outer door knobs that are secured to the spindle; 16 the latch; 17 a stud that is held in position by a screw 18 and projects inwardly from the inner wall of the lock case and enters the opening 19 in the rear of the latch to keep the rear end thereof in alignment; and 20 is a spring that exerts its tension so as to push the latch to its outermost position. Obviously, within my invention,

any other form of mechanism for maintaining the latch in proper alignment will operate equally as well as the mechanism just described.

Rotatably mounted in the lock case 11 and cover 12 is the hub 21, through which the spindle is projected, as is usual, and having a wing plate 22 forming part thereof, which engages the lugs 23 and 24 upon the latch 16.

The cam plate 25 has an opening 26 there-through at one end that is substantially the same shape in cross section as the spindle 13 which passes therethrough, and provided with a cam slot 27 near its outer end. Thus rotation of the knob spindle by either of the knobs 14 or 15 will withdraw the latch 16 and also impart a rotary movement to the cam plate 25.

Upon release of either of the knobs, the spring 20 returns the latch to its outermost position and restores the cam plate to the position substantially as shown in the drawings.

Fixed in the case 11 is a bell post 28, upon which is rotatably mounted a gear 29 and a pinion 30, which operate as a unit; a pinion 31, a bushing 32, and movable endwise therein is a release rod 33 having a thumb button 34 upon the outer end thereof and outside of the cover 12.

Through the walls of the post 28, near the bottom thereof, and just above the pinion 30 are two cam openings 35, located upon opposite sides thereof and through which projects a cam pin 36 which is fixed in and projects laterally from the release rod 33, and which engages the hub of the pinion 31.

The bell 37 is secured on the post 28 by a nut 38 and rests upon a washer 39. This washer is not essential but is desirable.

Upon the hub of the pinion 31 is a hammer carrier 40, shown herein as constructed with parallel plates 41 with pins 42 in the outer ends thereof, which project through openings in the hammers 43 that are free to move relatively thereto.

A spring 44 surrounds the bushing 32 between the washer 39 and the upper plates 41 and exerts a yielding pressure upon the hammer carrier.

The bushing 32 is not essential to the operation of the device, but insures a free and easy movement of the hammer carrier which

then travels about two revolving surfaces rather than one, that is, the inside and the outside walls of the bushing.

Movable about the pivot 45 in the lock case 11 is the sector 46, having a pin 47 therein, which projects into the cam slot 27.

By grasping either one of the knobs 14 or 15 a rotary movement is given to the cam plate 25 and through it the sector 46, the teeth of which mesh into those of the pinion 30, and through the gears 29, pinion 48, gear 49, and pinion 31, a rotary movement is imparted to the hammer carrier 40 about the axis of the post 28. This movement throws the hammers 43 outwardly which strike the bell 37 and thus sound the alarm. Openings 50 in the case 11 permit the sound waves to escape from the inside of the lock case.

If it is desired to release the alarm so that the same will not sound upon rotation of the knob, the thumb button 34 is partially rotated, and through the release rod 33 the cam pin 36 moves about the axis of the post 22 and against the walls of the cam openings 35, thereby lifting the pinion 31 against the tension of the spring 44 and the teeth thereof out of engagement with those of the gear 49 so that positive connection between the sector 46 and the hammer carrier 40 is broken. The connection can be again readily made by reversing the direction of movement of the thumb button 34, when the cam pin will travel in the opposite direction in the cam openings 35 and the spring 34 will move the pinion 31 toward the pinion 30 and the teeth thereof will again engage with those of the gear 49. The pinion 48 and gear 49 are a unitary structure and rotate about a stud 51 fixed in the lock case 11.

This invention may be used in connection with any door having a knob, handle or similar means for operation, whether for a room, building, safe, vault, or otherwise.

There are minor changes and alterations that may be made within my invention, aside from those herein suggested, and I would therefore have it understood that I do not limit myself to the exact construction herein shown and described, but claim all that falls fairly within the spirit and scope of the appended claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a pinion to receive the power for operating the same; a hammer carrier actuated from said pinion; means for imparting an independent movement to the hammer carrier, whereby it may be disengaged from its operating mechanism; a sector pivotally connected with a pail having a fixed relation to said alarm

mechanism, the teeth of which mesh into those of said pinion; and a cam plate connected with the knob spindle having a cam slot therein, into which projects a cam pin fixed in said sector.

2. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a pinion to receive the power for operating the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with the knob spindle having a cam slot therein, into which projects a cam pin fixed in said sector; and means for disconnecting the striking mechanism of said alarm mechanism from said pinion movable substantially parallel with the axis of rotation of the striking mechanism.

3. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a pinion to receive the power for operating the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with the knob spindle having a cam slot therein, into which projects a cam pin fixed in said sector; and means for disconnecting the striking mechanism of said alarm mechanism from said pinion, and comprising rotatable cam means for shifting the relative position of one of the pinions.

4. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a striking element; a pinion to receive the power for operating the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with the knob spindle having a cam slot therein, into which projects a cam pin in said sector; and means movable parallel with the axis of said pinion for disengaging said striking element so that the same may be motionless, irrespective of the movement of said knob spindle.

5. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a striking element; a pinion to receive the power for operating the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with a knob spindle having a cam slot therein, into which projects a cam pin in said sector; and means for moving said pinion out of mesh with the toothed part from which motion is transmitted thereto and in a path substantially parallel with the axis of the pinion.

6. In a device of the character described, the combination with a knob spindle; of an alarm mechanism having a striking element; a pinion to receive the power for operating

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the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with a knob spindle having a cam slot therein, into which projects a cam pin in said sector; means movable parallel with the axis of said pinion for disengaging said striking element so that the same may be motionless, irrespective of the movement of said knob spindle; and means for disengaging said striking element comprising a fixed part having a cam opening, a rotary post therein with a part thereon projecting into said cam opening and upon which rests a portion of said striking element.

7. In a device of the character described,

the combination with a knob spindle; of an alarm mechanism having a striking element; a pinion to receive the power for operating the same; a sector pivotally connected with said alarm mechanism, the teeth of which mesh into those of said pinion; a cam plate connected with the knob spindle having a cam slot therein, into which projects a cam pin in said sector; means actuated from the exterior of the device and movable parallel with the axis of said pinion for disengaging said striking element so that the same may be motionless, irrespective of the movement of said striking element.

In testimony whereof, I have hereunto affixed my signature.

ANDRU G. PAPPADAKIS.