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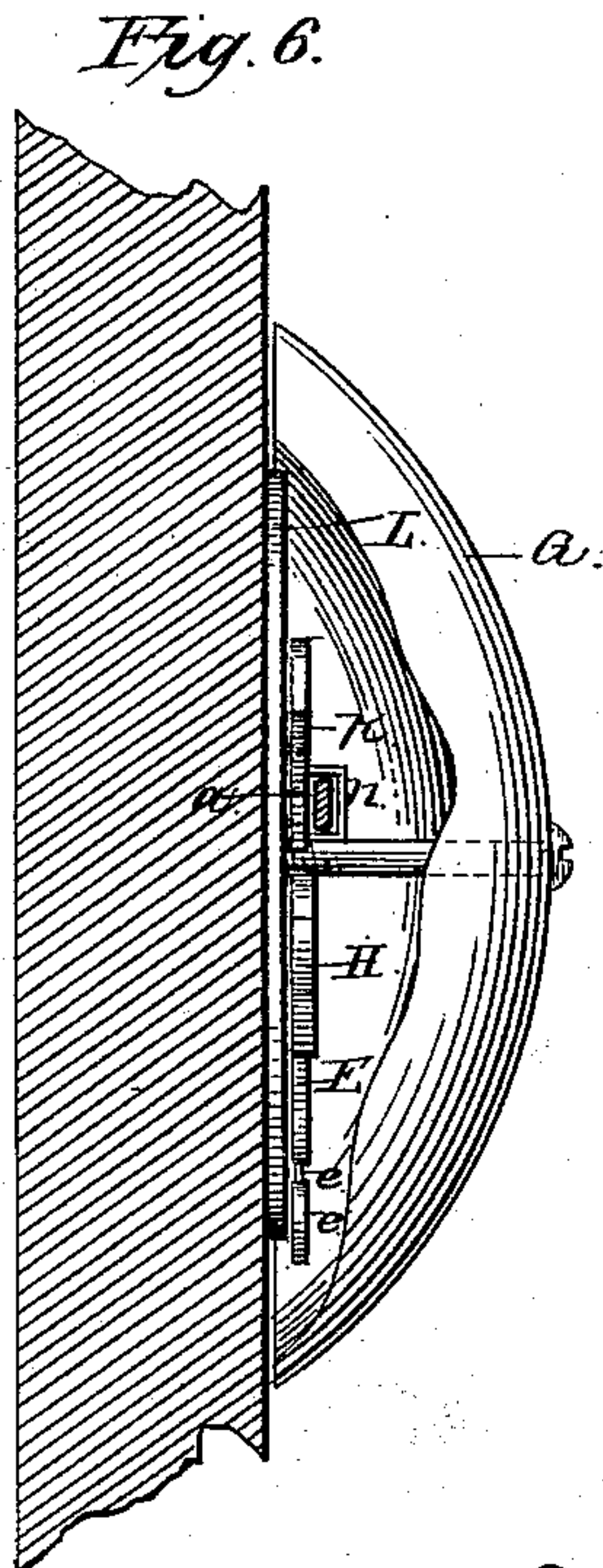
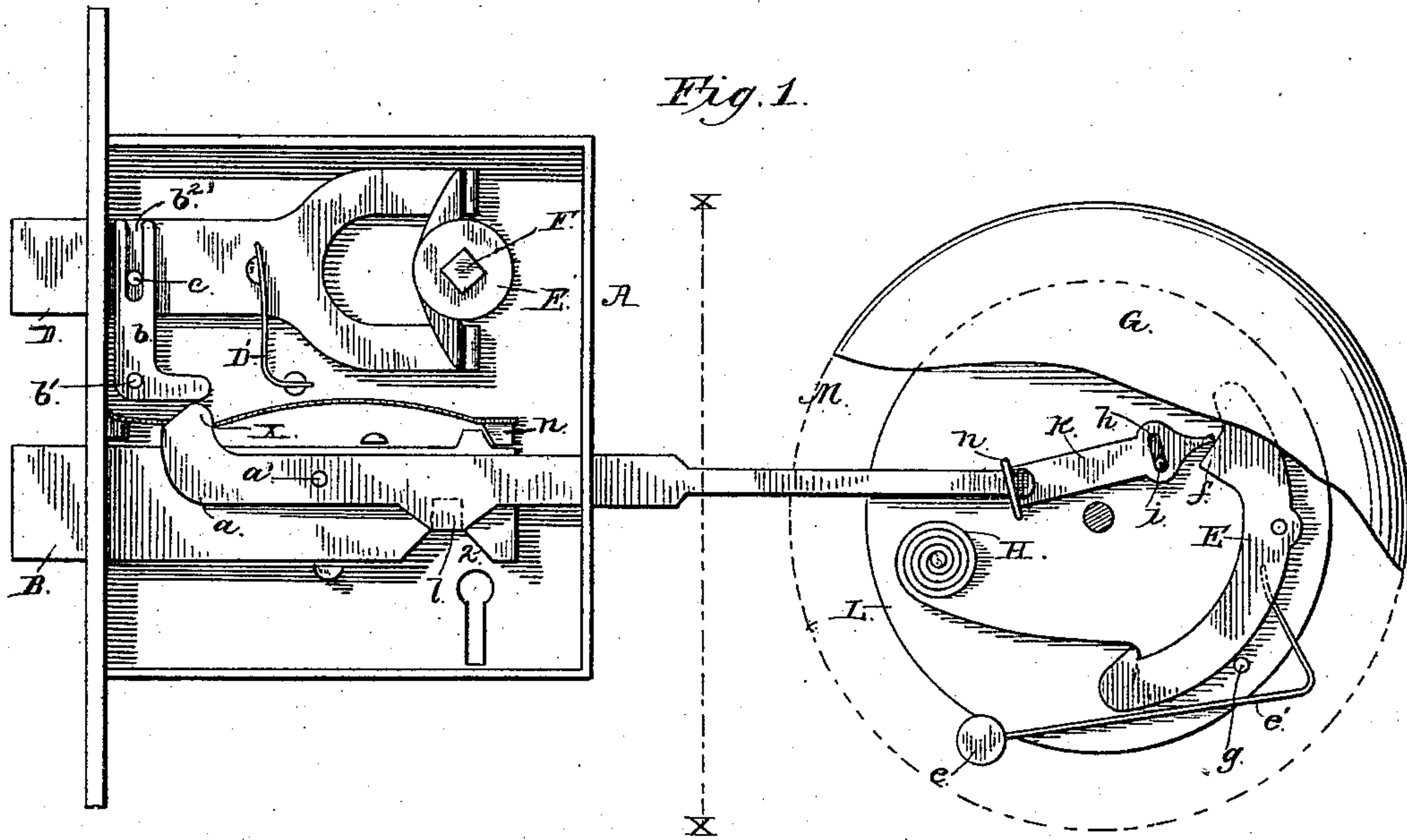
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W. B. BRADSBY & E. W. HAGEE.

ALARM LOCK.

No. 370,677.

Patented Sept. 27, 1887.



WITNESSES

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3 Sheets—Sheet 2.

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Fig. 1.

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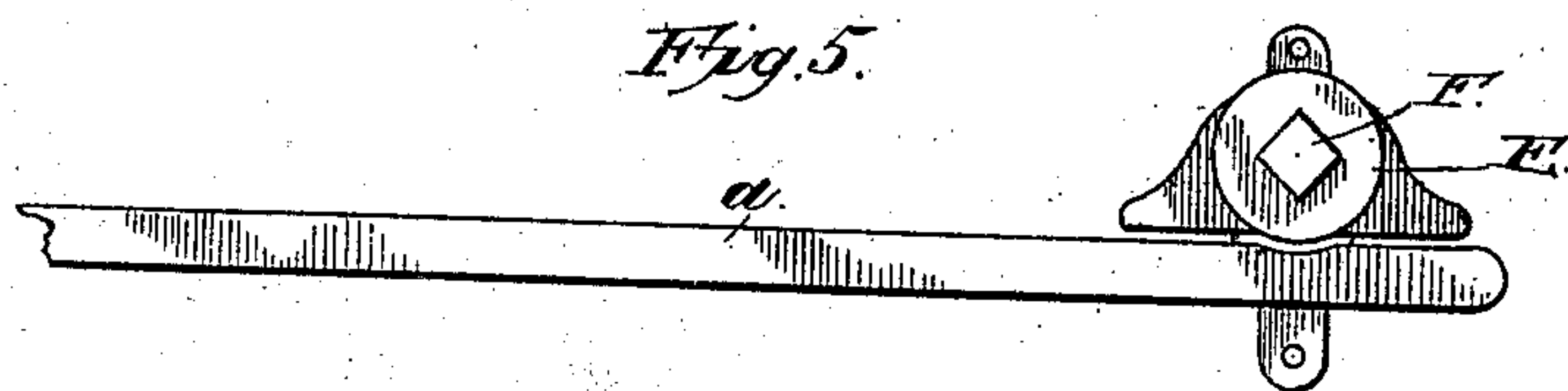
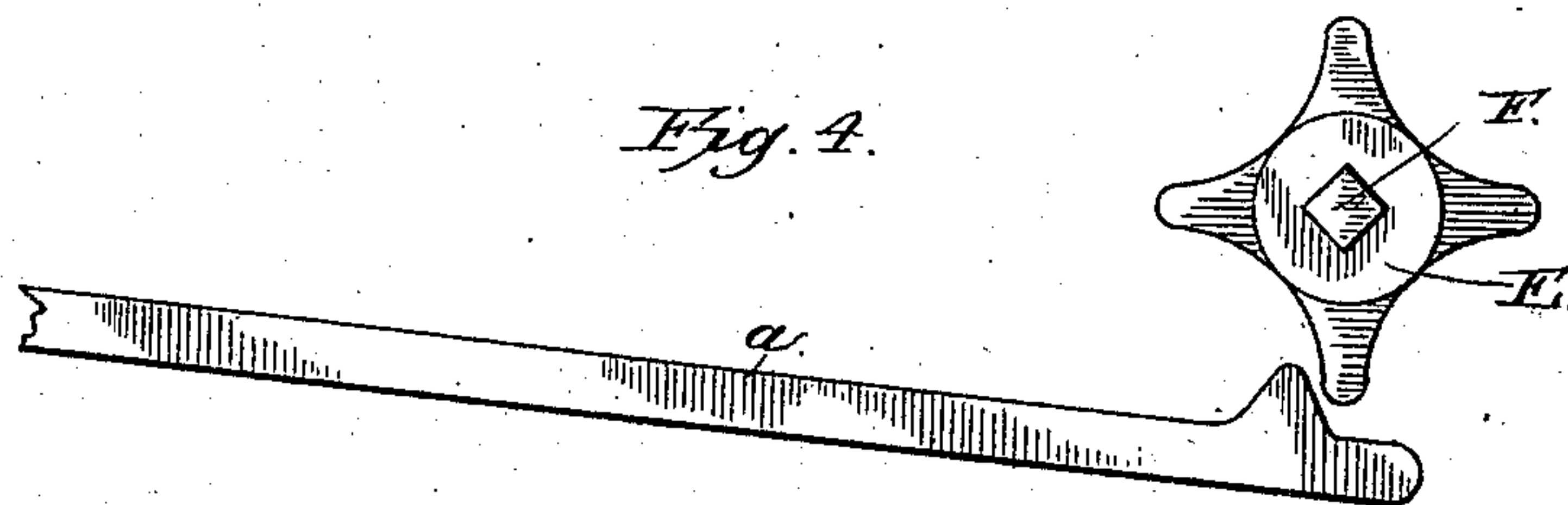
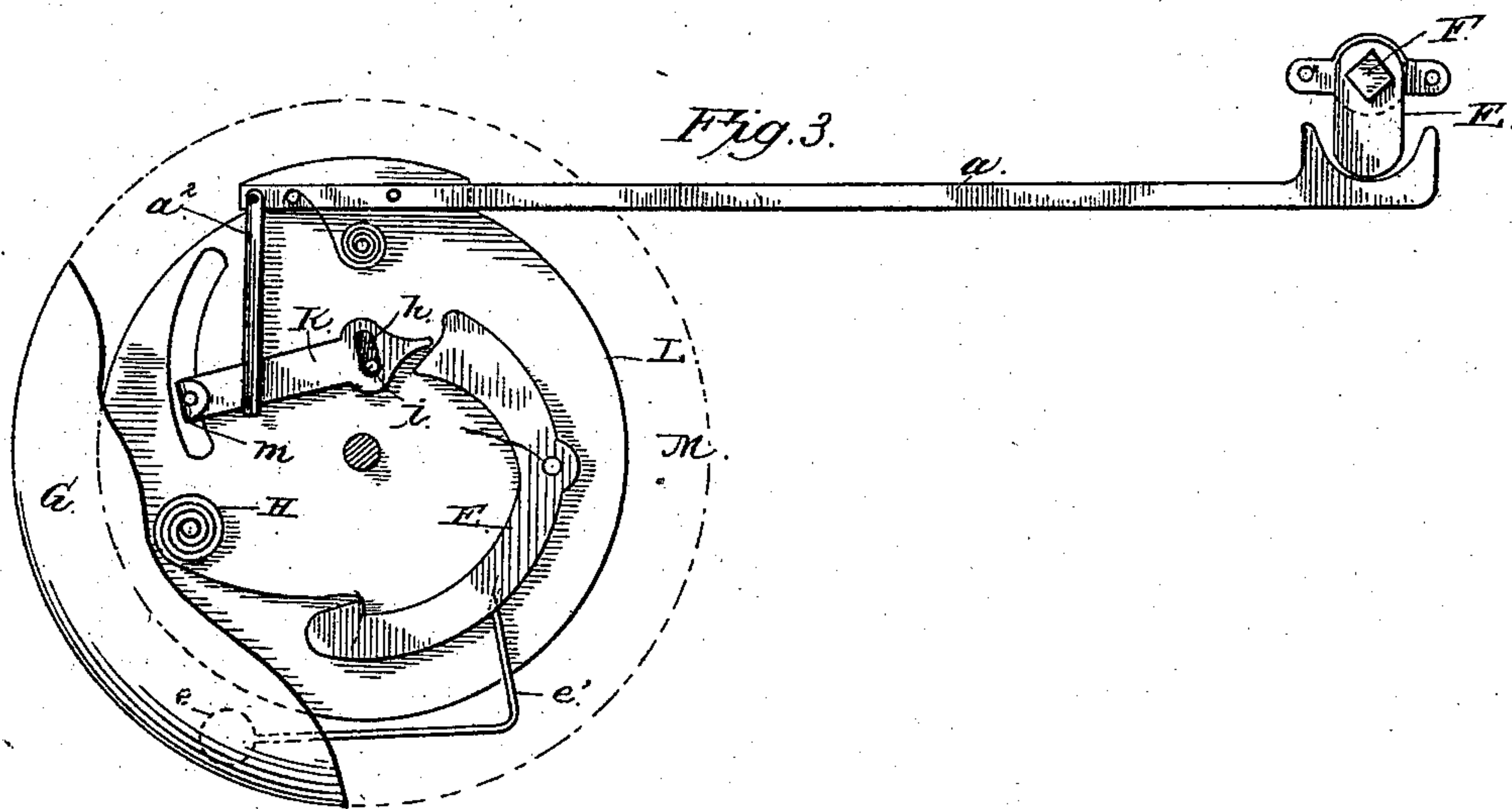
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WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM B. BRADSBY AND EDWARD W. HAGEE, OF GREENVILLE, ILLINOIS.

ALARM-LOCK.

SPECIFICATION forming part of Letters Patent No. 370,677, dated September 27, 1887.

Application filed April 30, 1887. Serial No. 236,681. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM B. BRADSBY and EDWARD W. HAGEE, citizens of the United States, residing at Greenville, in the county of Bond and State of Illinois, have invented certain new and useful Improvements in Alarm-Locks, of which the following is a specification.

The object of our invention is to provide a combined lock and latch with an alarm mechanism and devices that will be operated by the key when the locking-bolt is in either position, or by turning the door-knob when the locking-bolt is in its locking position.

A further object is to provide mechanism and devices that will sound an alarm or make the usual door-bell signal irrespective of any particular position of the locking-bolt, the devices employed in accomplishing the second object above stated being simply a modification of those employed in that first stated.

The invention consists in the construction and combination of parts, hereinafter fully described, and pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a view in elevation of a combined lock and latch provided with our improved alarm devices and means for operating them, the lock-bolt and knob-latch being in their locking positions. Fig. 2 is a similar view with the lock-bolt thrown. Fig. 3 is a similar view of the modification hereinbefore referred to. Figs. 4 and 5 are modifications of the device for operating the bell-lever. Fig. 6 is a sectional view on the line *xx*, Fig. 1; and Fig. 7 is a section taken on line *yy*, Fig. 2.

Where they occur in different figures like symbols of reference indicate corresponding parts.

The letter A designates the lock-case; B, the lock-bolt, arranged to slide horizontally therein. The bolt may be provided with the usual tumbler, or with a spring-actuated dog, *n*, which engages a projection or its equivalent (a notch) upon the bolt B to retain the bolt in its locking or unlocking positions.

D designates a knob-latch held normally in its latching position by a spring, D', and E the spindle of the door-knob, which is pro-

vided with any approved means for operating the latch.

All the parts just described are well known and need no further description.

In carrying out our invention, however, we pivot upon a suitable bearing, *a'*, on the lock-bolt a lever, *a*, having a toe or projection, *x*, at one end within the lock-case and its other end extending out of the lock-case. In the lock-case we pivot, on a suitable bearing, *b'*, a bell-crank or boot-shaped lever, *b*, having its upper end bifurcated or made with a slot, *b*². This bell-crank lever is so arranged in the lock-case that its toe will bear upon the toe or projection *x* of the lever *a*, and that the slot *b*² in the other end may be engaged by a pin, *c*, on the knob-latch. It will thus be seen that when the parts are in the position shown in Fig. 1 the movement of the knob-latch will cause the lever *a* to vibrate, and when in the position shown in Fig. 2 that the movement of the latch will not cause an operation of the lever *a*. In either case, however, the operation of the key will effect vibration of lever *a*.

The alarm device M is composed of a bell, G, of any suitable form, (in this instance the hollow parti-spherical,) secured upon a plate, L, made fast on the door. Upon this plate is pivoted a lever, E, having attached thereto, by means of a spring-arm, *e'*, the bell-hammer *e*. The opposite end of the lever is made with an angular projection, *f*, for a purpose to be presently explained. One end of a spring, H, secured on the plate L, bears upon the lever E, which causes it to be held against a stop-pin, *g*, as indicated in Figs. 1 and 2, which show the normal position of the lever and its bell-hammer. Upon the plate L there is also pivoted another lever, K, having an angular point at one end and its other end provided with a staple, or, when it is to be used in a mortise-lock, with an arm, *m*, projecting at right angles therefrom, provided with a slot. This lever K is so arranged and pivoted on the plate L that its pointed end will bear upon an inclined side of the projection *f* on the lever E, and when said lever K is oscillated on its pivot its pointed end will bear alternately on

the inclined sides of said angular projection *f* and cause the lever *E* to vibrate. This lever *K* may also have a slot, *h*, into which extends a pin, *i*, on the plate *L*, to guide and make steady the movements of the lever.

The alarm mechanism just described is secured upon the door in such position with respect to the lock-case that the outer end of the lever *a* will pass through the slot or staple in the end of the lever *K* opposite the angularly pointed end.

The operation is as follows: Supposing the parts to be in the position shown in Fig. 1—that is, when the bolt *B* is in its locking position—then the operation of the key in unlocking the locking-bolt, or a movement inward of the latch *D*, (caused by turning the shank *F*,) will operate the bell-crank lever *b*, the lower end of which will act against and depress the point *x* of the lever *a*, causing the outer end to rise, and with it the slotted end of the lever *K*. This operation of the lever *K* will cause its pointed end to act on the upper of the inclined edges of the point *f* of lever *E*, causing the latter to vibrate, and with it the bell-hammer *c*. As the hammer *c* is connected with the lever *E* by means of a light elastic spring, a single operation of the lever *E* should cause a plurality of concussions of the hammer against the bell. When the latch has been allowed to resume its normal position, the action of the spring *H* on the lever *E* will cause the inclined side of the portion *f* to act against the point of the lever *K* in such manner as to resume its original or normal place on the upper side of said portion *f*, even if the latch were turned so far inward as to cause the point of the lever *E* to pass the vertex of the portion *f*.

If the parts are in the position shown in Fig. 2—that is, when the locking-bolt is in a non-locking position—the operation of the latch *D*, causing a depression of the toe portion of the lever *b*, will not effect an operation of the alarm, because in this position of the locking-bolt the toe *x* of the lever *a* is without the arc of movement of the toe of lever *b*.

As before stated, Fig. 3 illustrates a modification. In this view the parts of the alarm are nearly identical in construction, they being merely adapted to serve as a door-bell. The lever *a*, instead of being pivoted to the bolt, is pivoted on the plate *L*, and is connected with the lever *K* by means of an intermediate lever, *a*². As in Figs. 3 and 4, the lever is provided with one or more cam projections, against which a teat or teats on a rotatable shank act and cause the lever *a* to vibrate. The same result can be achieved by making the upper edge of the lever plane and having a winged projection on the shank to act on the lever, as indicated in Fig. 5.

It is obvious that this invention may be used with either a rim or mortise lock. If used with a mortise-lock, a hole is made in the door, as indicated by broken lines, Fig. 2, and

the lever *K* provided with a slotted arm, *m*, projecting at right angles therefrom. When used on a rim-lock, this arm is omitted, and the end of the lever is passed through a staple, *n*, on the said lever.

It will be observed that, to enable the key in locking or unlocking the locking-bolt *B* to engage the lever *a* and elevate its outer end, the lever is provided with a projection, *1*, depending from its under edge. This projection *1* upon the under edge of the lever *a* sets over the top portion of the notch or recess *2*, provided in the bolt *B* for the engagement of the key. By this construction, and the key being inserted in the lock and engaging the recess *2* in the locking-bolt, it will also engage the projection *1*, thus causing the elevation of the outer end of the lever *a*, and sounding the alarm.

It is manifest that numerous modifications may be made in the details of construction and arrangement of parts without departing from the spirit and scope of our invention. For instance, the construction illustrated in Fig. 3 may be used in connection with the lock and latch by simply connecting the lever *a* (shown in Figs. 1 and 2) with the lever *K*, (shown in Fig. 3,) by which arrangement the alarm will be operated by the lock and latch mechanism or by the door-bell mechanism. We therefore do not limit ourselves to the exact construction and arrangement of parts herein shown and specified, but reserve the right to all such modifications as properly fall within the spirit and scope of our invention.

What we claim as our invention is—

1. The combination of a lock-case having a latching-bolt and a locking-bolt, a lever pivoted on the locking-bolt, and a lever pivoted in the lock-case, constructed and arranged to be operated by the latching-bolt to cause the lever on the locking-bolt to vibrate, substantially as described, and an alarm mechanism, substantially as described, arranged in proximity to the lever on the locking-bolt, so that when it vibrates it will operate the alarm, as set forth.

2. In a lock-alarm, the combination of the bell, a lever, *E*, provided near one end with a projection, *f*, having inclined sides, the hammer connected to lever *E* by the angular spring-arm *c*, a spring bearing upon the end of lever *E* opposite from the end having projection *f*, a stop for limiting the movement of the lever caused by the action of said spring, a lever, *K*, having an elongated bearing and formed with a pointed end engaging the inclined sides of the said projection, and an operating-lever, *a*, connected with the free end of lever *K*, substantially as set forth.

3. The combination of a lock-case having a latching-bolt and a locking-bolt, a lever pivoted on the locking-bolt, and a lever pivoted in the lock-case, constructed and arranged to be operated by the latching-bolt to cause the lever on the locking-bolt to vibrate, substantially as

described, with an alarm mechanism composed
of the bell, the lever E, having a hammer at-
tached thereto, and the projection *f*, with in-
clined sides, a spring and stop tending to hold
5 said lever E in one position, and a lever hav-
ing a pointed end arranged to act on an in-
clined edge of the projection *f* to cause said
lever to vibrate, as set forth.

In testimony whereof we affix our signatures
in presence of two witnesses.

WILLIAM B. BRADSBY.
EDWARD W. HAGEE.

Witnesses:

BELLE MORRIS,
EDITH E. COOPER.