(No Model.) 5 Sheets—Sheet 1.

J. W. KOHN.

ALARM LOCK.

No. 542,479. Patented July 9, 1895.

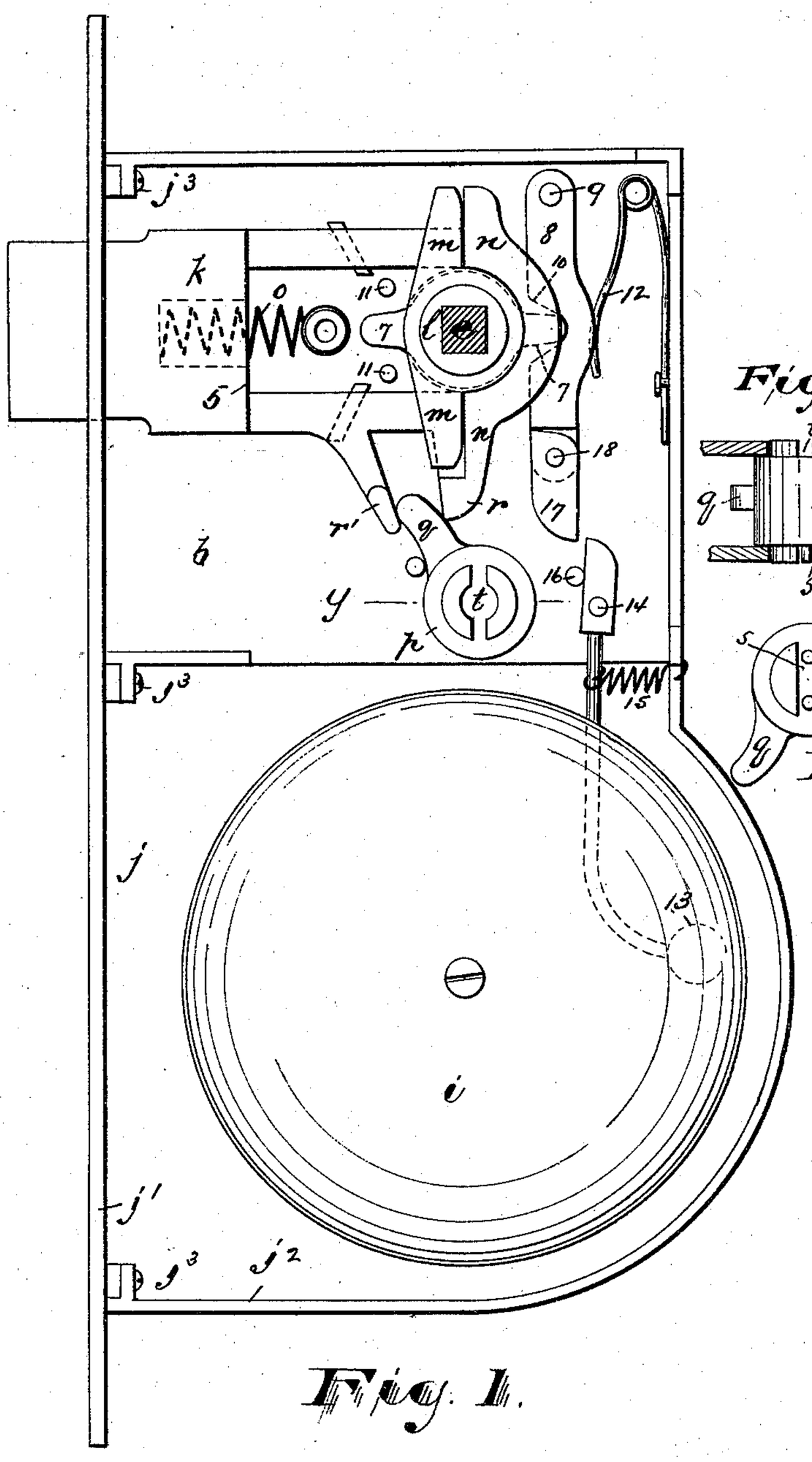

Fig. 1.

Fig. 1a

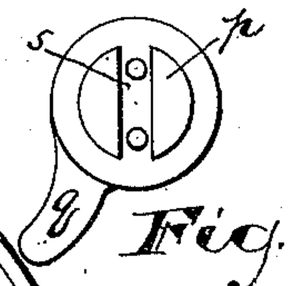

Fig. 1b

Witnesses

Robert Soellberger

Harry A. Mahler

Inventor:

Jacob William Kohn,

By Drake & Co. Atty's.

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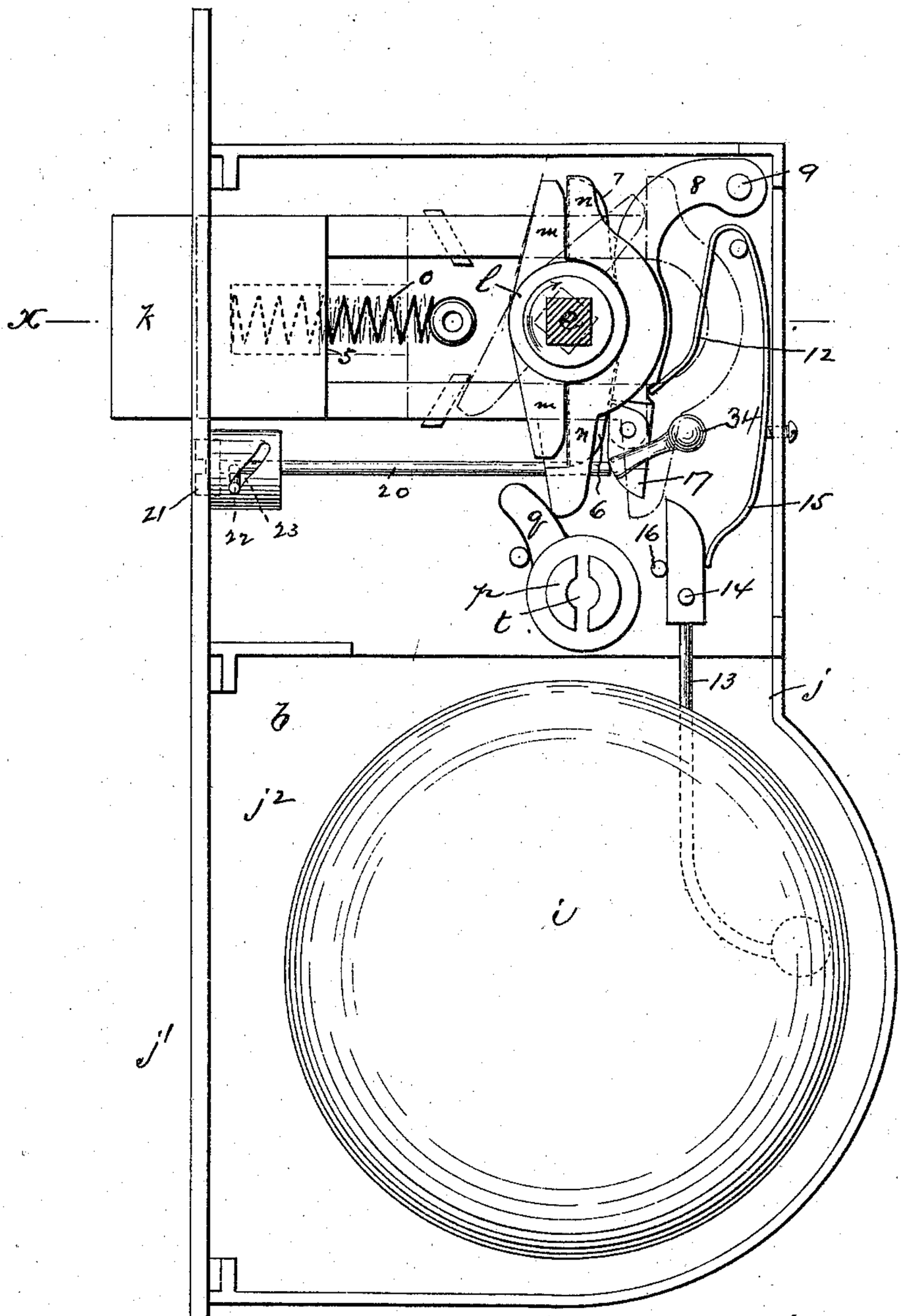

Fig. 2.

Witnesses

Robert Soelberger

Harry A. Mahler

Inventor,

Jacob William Kohn,

By Drake & Co Atty's.

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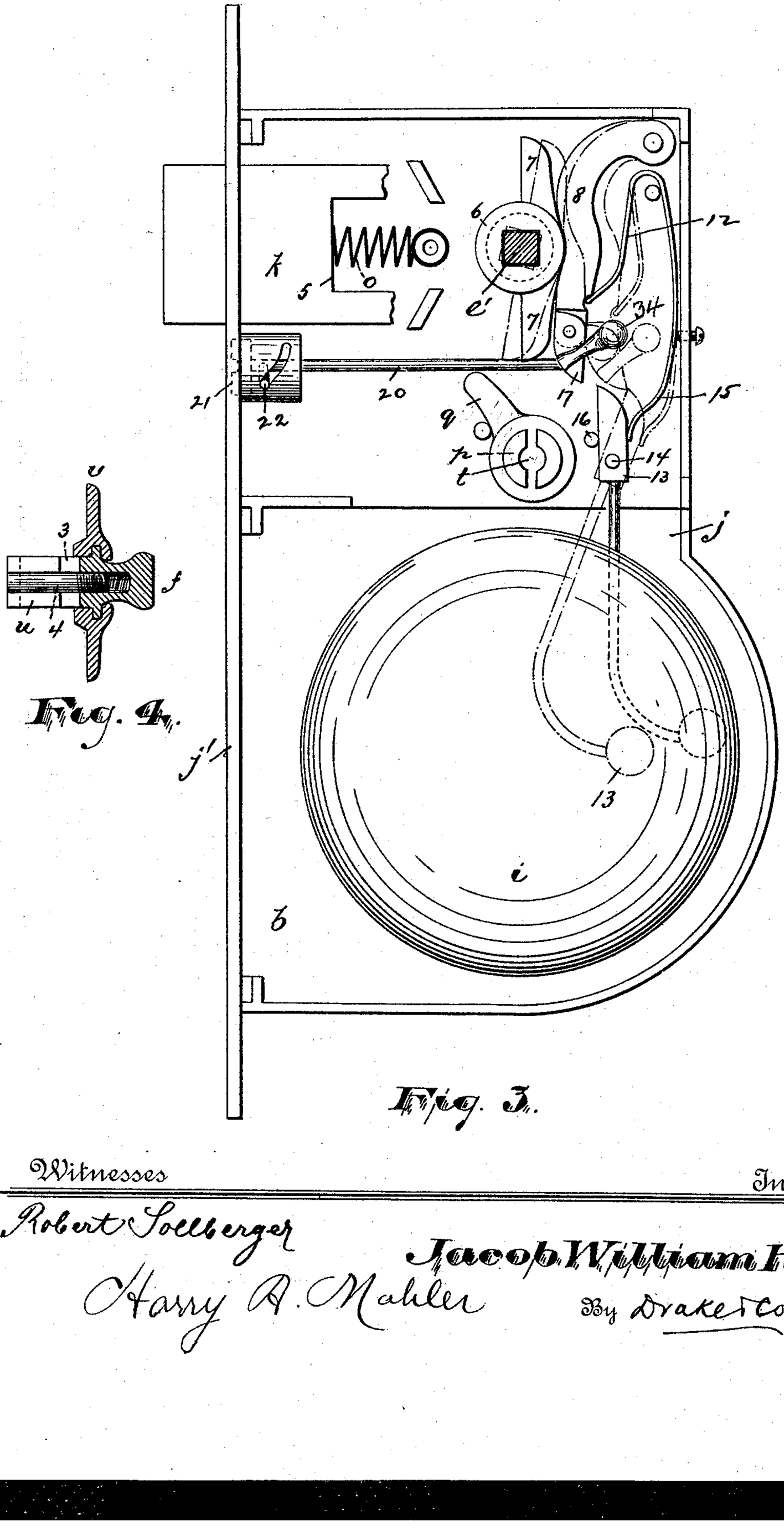

Fig. 3.

Fig. 4.

Witnesses

Robert Soelberger

Harry A. Mahler

Inventor:

Jacob William Kohn,

By Drake & Co Atty's.

(No Model.) 5 Sheets—Sheet 4.

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Fig. 5.

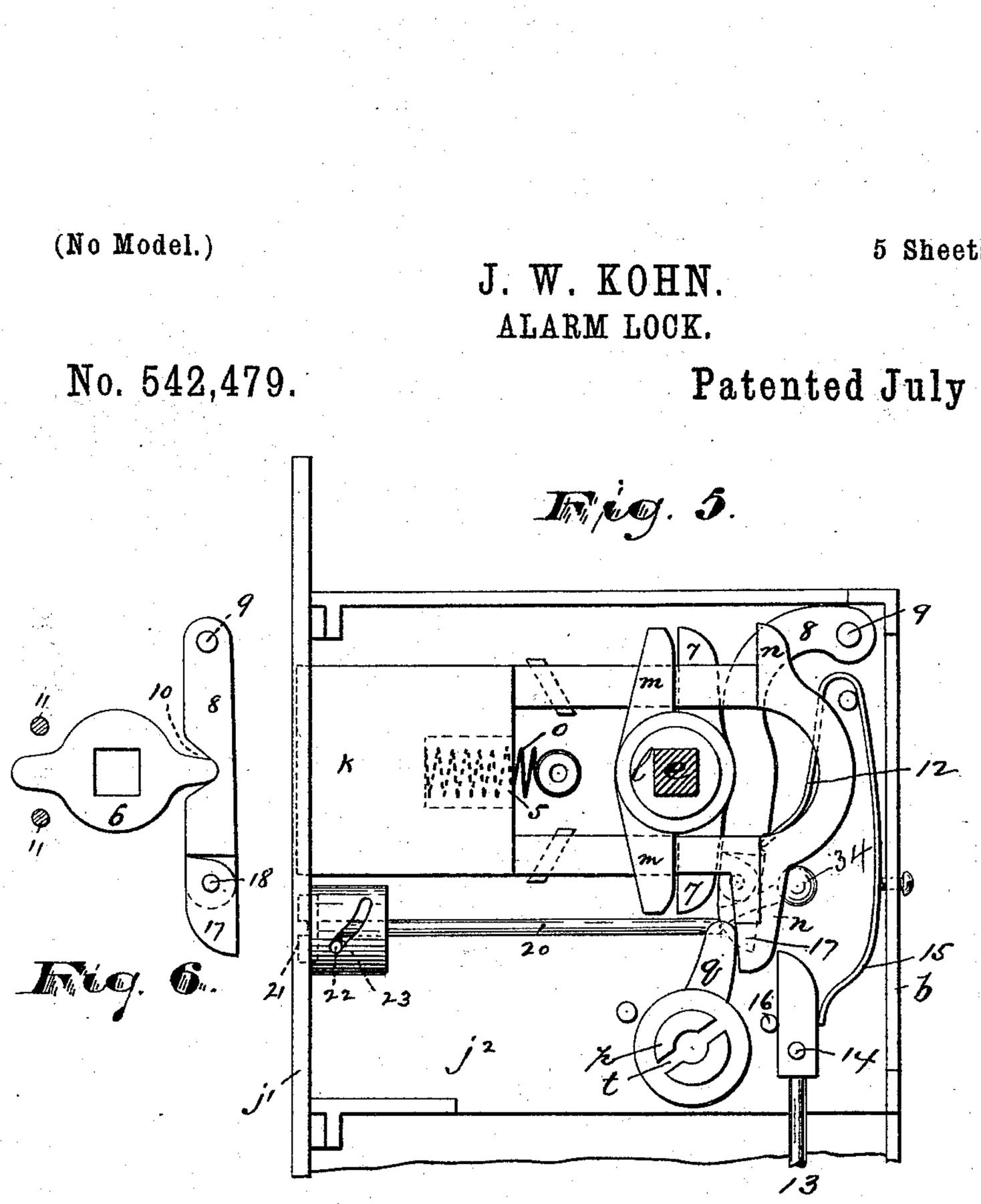

Fig. 6.

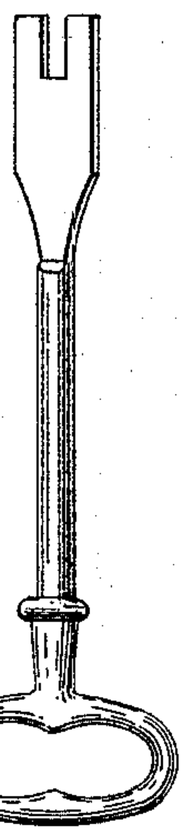

Fig. 7.

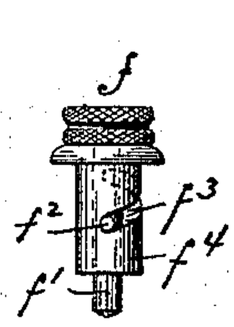

Fig. 8.

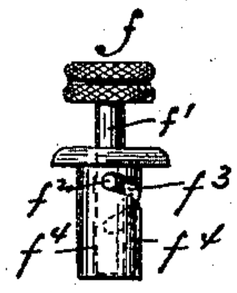

Fig. 9.

Fig. 10.

Witnesses

Robert Soelberger.

Harry A. Mahler

Inventor.

J. W. Kohn,

By Drake & Co. Atty's.

(No Model.) 5 Sheets—Sheet 5.

J. W. KOHN.

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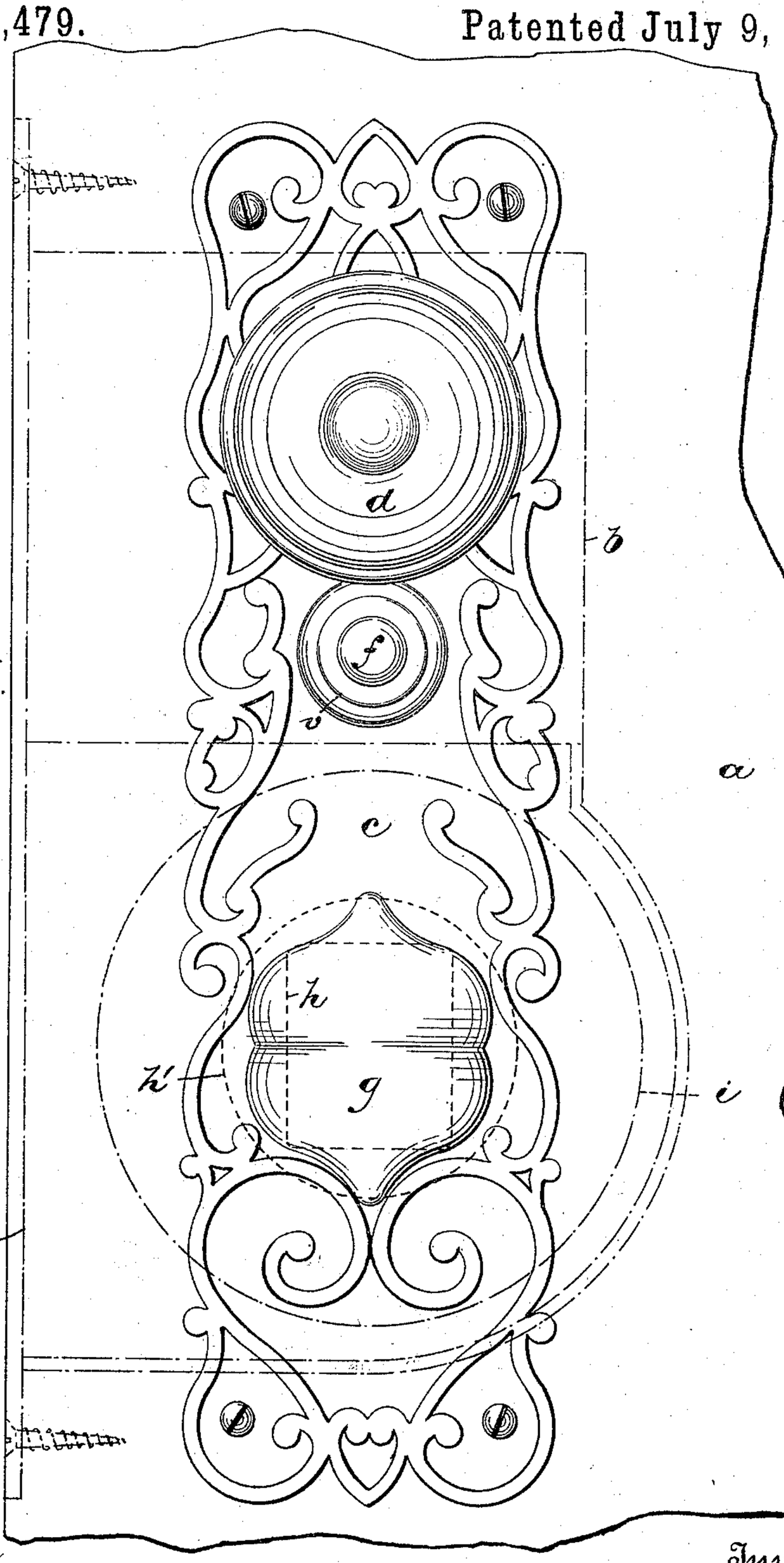

Fig. 11.

Witnesses
Robert Sollberger
Harry A. Nahler

Inventor,
Jacob William Kohn,
By Drake & Co. Atty's.

UNITED STATES PATENT OFFICE.

JACOB WILLIAM KOHN, OF NEWARK, ASSIGNOR TO GEORGE C. STEIGER, OF NEW BRUNSWICK, NEW JERSEY.

ALARM-LOCK.

SPECIFICATION forming part of Letters Patent No. 542,479, dated July 9, 1895.

Application filed November 2, 1893. Renewed January 18, 1895. Serial No. 535,416. (No model.)

To all whom it may concern:

Be it known that I, JACOB WILLIAM KOHN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Alarm-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and numerals of reference marked thereon, which form a part of this specification.

The objects of this invention are to provide a mortise-lock with alarm attachments which will enable an alarm to be sounded when the knob is turned from the outside, to reduce the cost of construction, to simplify the mechanism and render the same more durable, and to secure other advantages and results, some of which will be referred to in connection with the description of the working parts.

The invention consists in the improved alarm-lock and in the arrangements and combinations of parts, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters and numerals indicate corresponding parts in each of the several views, Figure 1 is a plan of the lock, the cap-plate being removed to show the interior construction and operation of the parts. Fig. 1ª is a section on line *y*, and Fig. 1ᵇ is a reverse detail of a key-tumbler. Fig. 2 is a view similar to Fig. 1, with certain parts modified in construction. Fig. 3 is another view of the modification, showing the latch-bolt broken away and the latch-tumbler removed to illustrate the underlying parts more clearly. Fig. 4 is a detail view illustrating the construction of a certain night-lock. Fig. 5 is still another plan of the modification, showing the latch-bolt drawn back. Fig. 6 is a detail plan of the bell-tumbler and jointed lever. Fig. 7 is a view of a key that may be employed. Figs. 8 and 9 show another night-lock of varied construction, showing the locking and unlocking positions; and Fig. 10 is a sectional view taken on line *x*, Fig. 2. Fig. 11 is a front elevation of a portion of a door to which the invention has been applied and showing the escutcheon-plate with a knob for turning the spindle, a night-lock finger-piece, and a shield for the sound-opening in their relative positions and the bell and lock in outline.

In said drawings, *a* indicates the door, and *b* the mortise alarm-lock arranged in a mortise or chamber cut into the edge of the door.

c indicates the escutcheon-plate; *d d'*, the door-knobs attached to a jointed spindle *e e'*.

f indicates the night-lock handle; *g*, the shield attached to the escutcheon-plate and covering the sound-opening *h*, formed in said plate, and also the coinciding sound-opening *h'* of the door, and *i* is the alarm-bell adapted to be inserted in the mortise with the lock, the latter being extended to provide a bearing for said bell.

Within the lock-case *j*, consisting of a metal face-plate *j'*, adapted to lie against the edge of the door, the shallow casting j^2, preferably of cheaper metal than the face-plate and secured thereto by screws j^3, and a cup-plate j^4, Fig. 10, are arranged the locking mechanisms and means for sounding an alarm on the bell. Of said locking and alarm mechanisms, *k* indicates a latch-bolt; *l*, a tumbler for the same, arranged on the section *e* of the spindle, the arms *m m* of which engage the bearings *n n* of the latch-bolt, so as to repress said bolt when the tumbler is turned in either direction by the spindle. A spring *o* serves to hold the latch-bolt outward in its latching or locking position.

The latch may be locked so that it cannot be repressed by the tumbler *l* and spindle-section *e* by means of a tumbler *p*, the arm *q* of which enters between fingers *r r'* of the latch-bolt. Said tumbler at one end of its pivotal hub is provided with a key-recess *s*, Figs. 1ª and 1ᵇ, adapted to allow a night-key, Fig. 7, to be employed from the outside of the door in turning the said hub and repressing the latch-bolt. The other end of said hub, where it extends through the lock-case and lies flush with the outside thereof, as indicated in Fig. 1ª, is slotted or otherwise formed, as at *t*, to receive a dead-latch, lock, or fastener *u*, Fig. 4, which is fastened to the interior side of the door on a suitable inside plate in line with the

said slotted hub, the said latch or fastener entering into the slot *t* to lock the tumbler or prevent pivotal movement of the hub. The said dead-latch, lock, or fastener is provided, where it projects from the door, with a finger-piece which operates the latch or fastener, so as to prevent pivotal action of the tumbler *p*.

The preferred dead-latch or fastener is shown in Fig. 4, in which *v* is a bearing-plate, which may be a part of the escutcheon-plate, either integral or an independent piece soldered or otherwise attached to said plate and providing bearings adapted to allow a pivotal movement of the finger-piece *f*. At the rear of said bearing-plate are ways 3, between which the dead-latch slides to and from the slot *t* in the tumbler *p*.

The dead-latch *u* is provided with a screw-shank 4, which enters the threaded finger-piece *f*, so that the pivotal action of said finger-piece produces the desired movement of the latch to and from the slot in the tumbler *p* to fasten or release the said tumbler.

The latch-bolt *k* may be locked by other means than those above described. For example, I may employ a dead-latch, such as shown in Figs. 8, 9, and 10, in which the finger-piece *f* is provided with a shank *f'*, having a pin f^2, working in an inclined groove f^3 in a sleeve f^4, adapted to be inserted in the door *a* and to hold the shank *f'*. The sleeve and its shank are so disposed as to engage the bearing 5 of the latch-bolt *k*, when the said shank is forced inward by turning the pin f^2 on the incline of the groove f^3, as will be understood. At the side of the tumbler *l* on the section *e'* of the spindle connecting with the outside door-knob *d'* is arranged an alarm-tumbler 6, having arms 7 7, which engage a jointed lever 8, fulcrumed at 9 to the case j^2.

Variations may be made in the relations of the tumbler-arms 7 7 to the lever 8, as may be noted by comparing Fig. 1 with Fig. 3; but the preferred construction is indicated in Fig. 1, where the lever is provided with a V-shaped notch or recess 10, Fig. 6, in which one of the tumbler-arms 7 works in either direction with about the same ease. The other tumbler-arm 7 is disposed between stops 11 11, which limit the movements of said tumbler, so that the first said arm 7 cannot pass out from the recess 10 when the tumbler is turned. A spring 12 serves to hold the lever 8 against its tumbler. Said lever at its free end engages a bell-hammer 13, arranged on a fulcrum 14, and is drawn into alarming contact with the bell *i* by a spring 15. The movement of the lever is limited and controlled by a stop 16, which holds the hammer normally away from the bell.

To allow the lever 8 to slide back to operative position after sounding an alarm in connection with the bell-hammer, I have jointed the same, as shown clearly in Fig. 6, the end 17 being pivoted at 18 to the body of the lever. The said end 17 is so formed and disposed in its relation to the body as not to turn in its forward or alarming movement, but in its return movement it turns pivotally and rides over the end of the hammer-lever. This action is secured by rounding the portion of the end 17, which engages the body of the lever at one side thereof and making the opposite side angular, so that a shoulder is formed, which prevents pivotal movement when said shoulder engages the body portion of the lever.

It will be understood from the foregoing that the action resulting from the turning of the outside door-knob is only to sound an alarm and that the action of the interior knob is to repress the latch-bolt *k* and allow the door to be opened, and such repression of the latch-bolt cannot be secured from the outside of the door except by a key, and even a key cannot open the door when the dead-latch fastens the key-tumbler *p;* but at all times the outside knob may be turned to produce an alarm. To secure this independence of action of the two knobs, I have jointed the knob-spindle so that one section works pivotally independent of the other. The preferred method of joining is shown in Fig. 10, where the sections are provided respectively with male and female threads, which hold the parts together, but allow the independent pivotal movement required.

Under some conditions it may be desirable to cut off the alarm mechanisms, and in this event I employ a repression-piece 20, attached to a turn-piece 21, having a pin 22 working in an inclined slot 23, formed in a cylindrical receptacle in the lock-case, which repression-piece at its inner end engages the lever 8, and, when forced inward, throws said lever from engagement with the alarm-tumbler, as will be understood.

The slight pressure of the repression-piece required to prevent the joined end or pawl 17 from engaging the bell-hammer is entirely an end pressure, and thus the bearings of said piece on the turn-piece 21 and the end of the cylindrical part of the lock-case containing said turn-piece are sufficient to hold said repression-piece in position.

To cause the pivoted end 17 of the lever 8 to quickly return to its normal position, I may employ a weighted extension 34, which may be cast integral with said end piece or otherwise.

Having thus described the invention, what I claim as new is—

1. The improved alarm lock herein described, in which is combined with the lock case, an alarm bell, a hammer for sounding an alarm thereon, a tumbler within said case for operating said hammer, a latch or locking bolt, *k*, and a sectional spindle provided with knobs on opposite sides of said lock case which are independently operable, one operating the tumbler for the alarm bell and the other the latch or bolt *k*, all substantially as set forth.

2. In an alarm lock, the case, the sectional spindle, the sections of which are independ-

ently operable from opposite sides of the door, tumblers arranged within the lock case at opposite sides of the joint therein, a lever 8 having the pivoted end piece, 17, and having a V shaped notch to receive the arm 7 of the tumbler, 6, said bell hammer and an alarm bell, all arranged and combined substantially as set forth.

3. In combination with the case of an alarm lock adapted to be inserted in the mortise of a door, a latch *k* spindle, *e*, in sections operable one independent of the other, tumblers arranged on said spindle, one at the side of the other on opposite sides of the joint in said spindle, a lever 8, having a pivoted end section, 17, a spring 12 holding said lever to one of said tumblers, a spring, *o*, holding latch, *k*, to the other, an alarm bell-hammer and bell engaged by the section 17, a key tumbler, *p*, for operating the latch without operating the alarm, and knobs for operating the spindle sections from opposite sides of the door, substantially as set forth.

4. In an alarm lock, the combination with a sectional spindle and its knobs, tumblers arranged on said sections, one operating the latch bolt and the other the alarm bell mechanisms, said latch bolt and alarm mechanisms, a key tumbler for operating the latch bolt from the side of the door having the alarm bell-operating knob and a dead latch operable from the inside of the door to prevent repression of said latch bolt, all substantially as and for the purposes set forth.

5. In an alarm lock, the combination therein, of a sectional spindle one section of which operates alarm operating mechanisms and the other latch operating mechanisms, an alarm bell, and latch and said mechanisms for operating the same independently, a repression piece 20, adapted to throw the alarm operating parts out of operative relation with the bell, a key-tumbler adapted to operate the latch independently of the latch operating spindle and a dead lock for preventing the unlatching of the latch, substantially as set forth.

6. In an alarm lock, the combination with the latch, jointed lever 8, independent tumblers, jointed spindle and alarm mechanisms, a repression piece, 20, attached to a turn piece arranged in a slotted cylinder of the lock case and said lock case having said slotted cylinder and turn piece therein adapted to give longitudinal movement to the repression piece as the same is turned to throw the alarm mechanisms from the alarm-sounding position, substantially as set forth.

7. In an alarm lock, the combination with the slotted key tumbler and the latch operated thereby, of the pivotal finger piece, *f*, and the sliding dead latch *u*, adapted to enter the slot of said tumbler to lock said tumbler, having the screw shank 4 working in said finger piece, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of October, 1893.

JACOB WILLIAM KOHN.

Witnesses:
CHARLES H. PELL,
OLIVER DRAKE.