

No. 855,469.

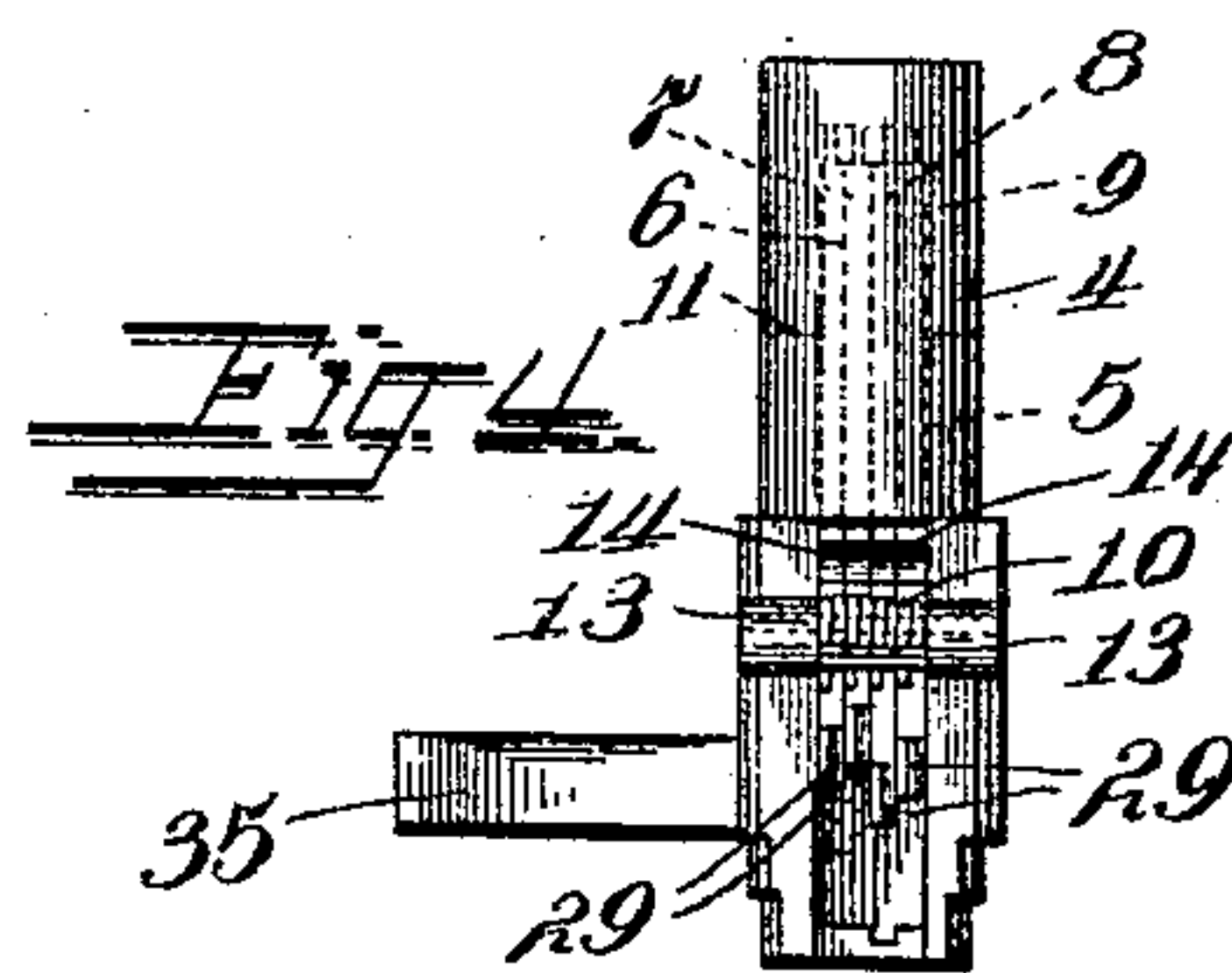
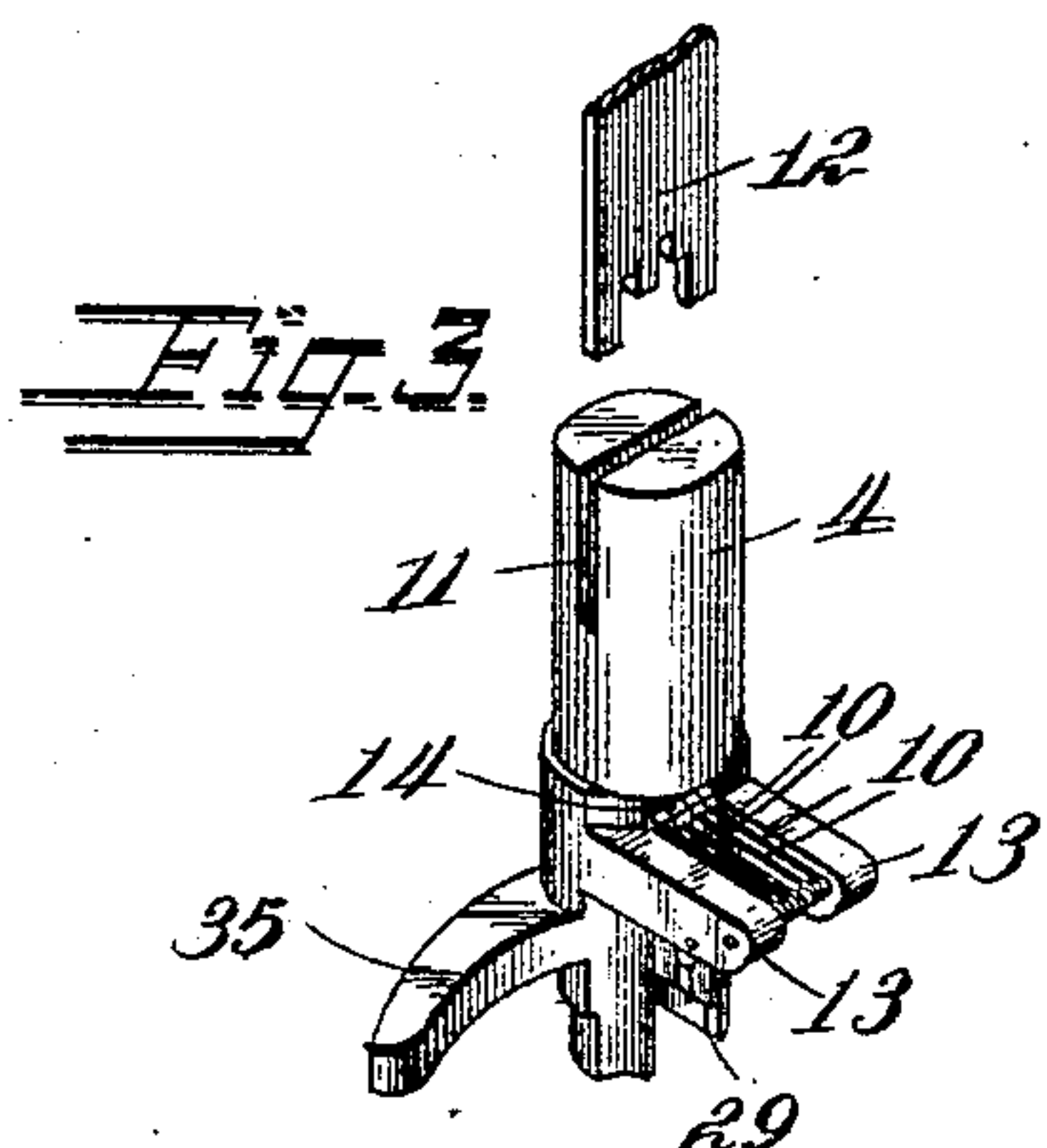
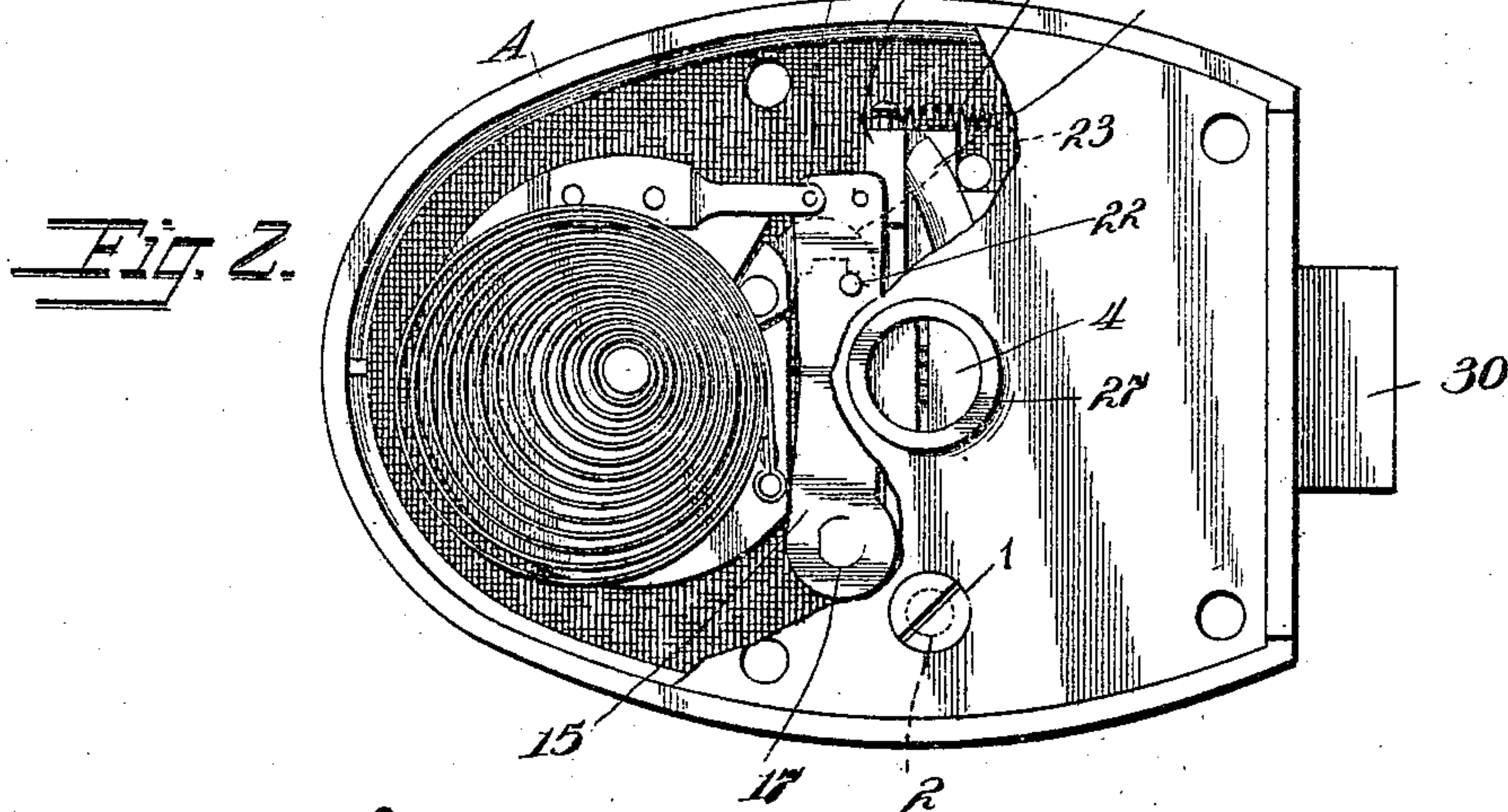
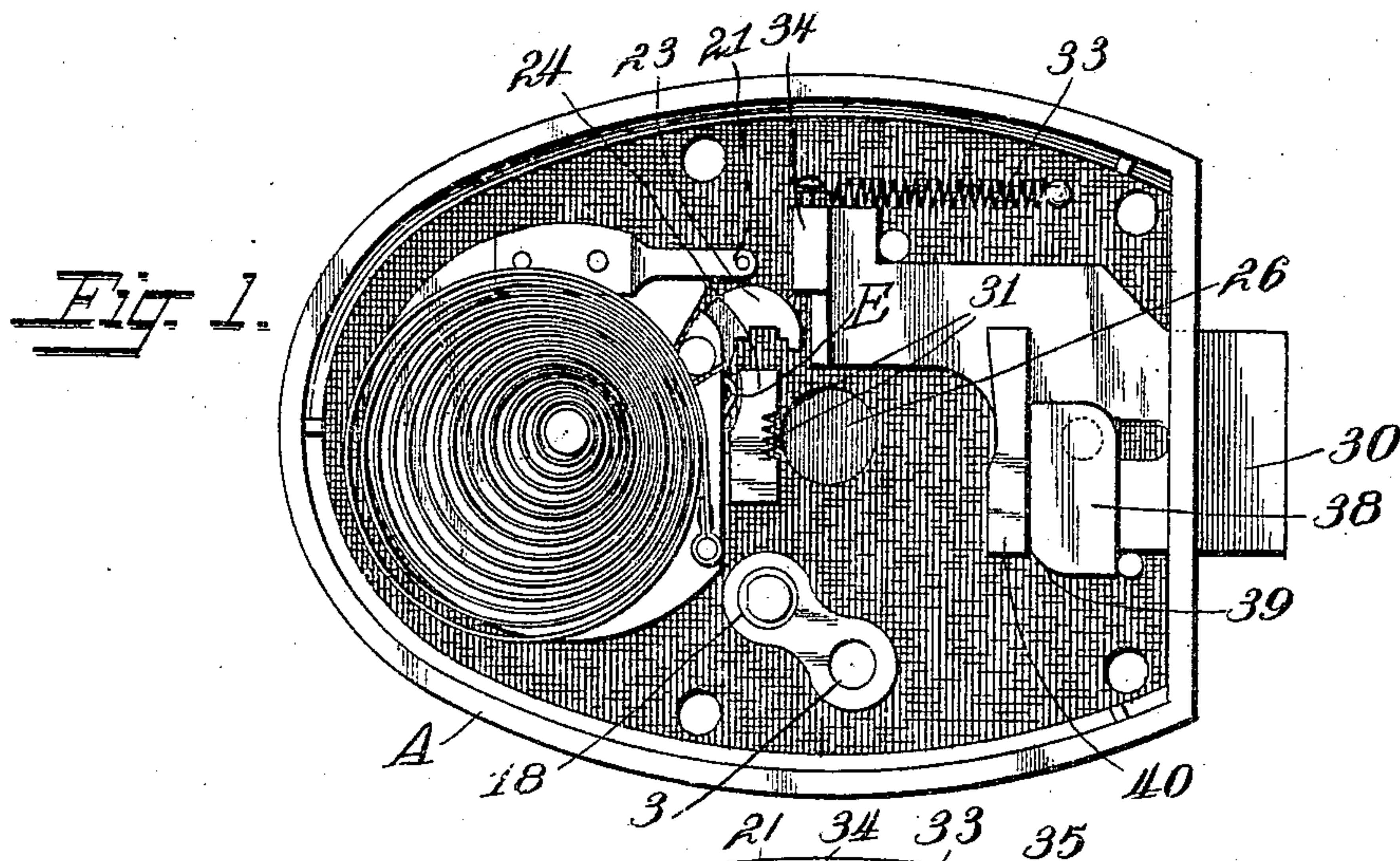
PATENTED JUNE 4, 1907.

O. MILLER & P. KUNZINGER.

ALARM LOCK.

APPLICATION FILED NOV. 25, 1904.

2 SHEETS—SHEET 1.



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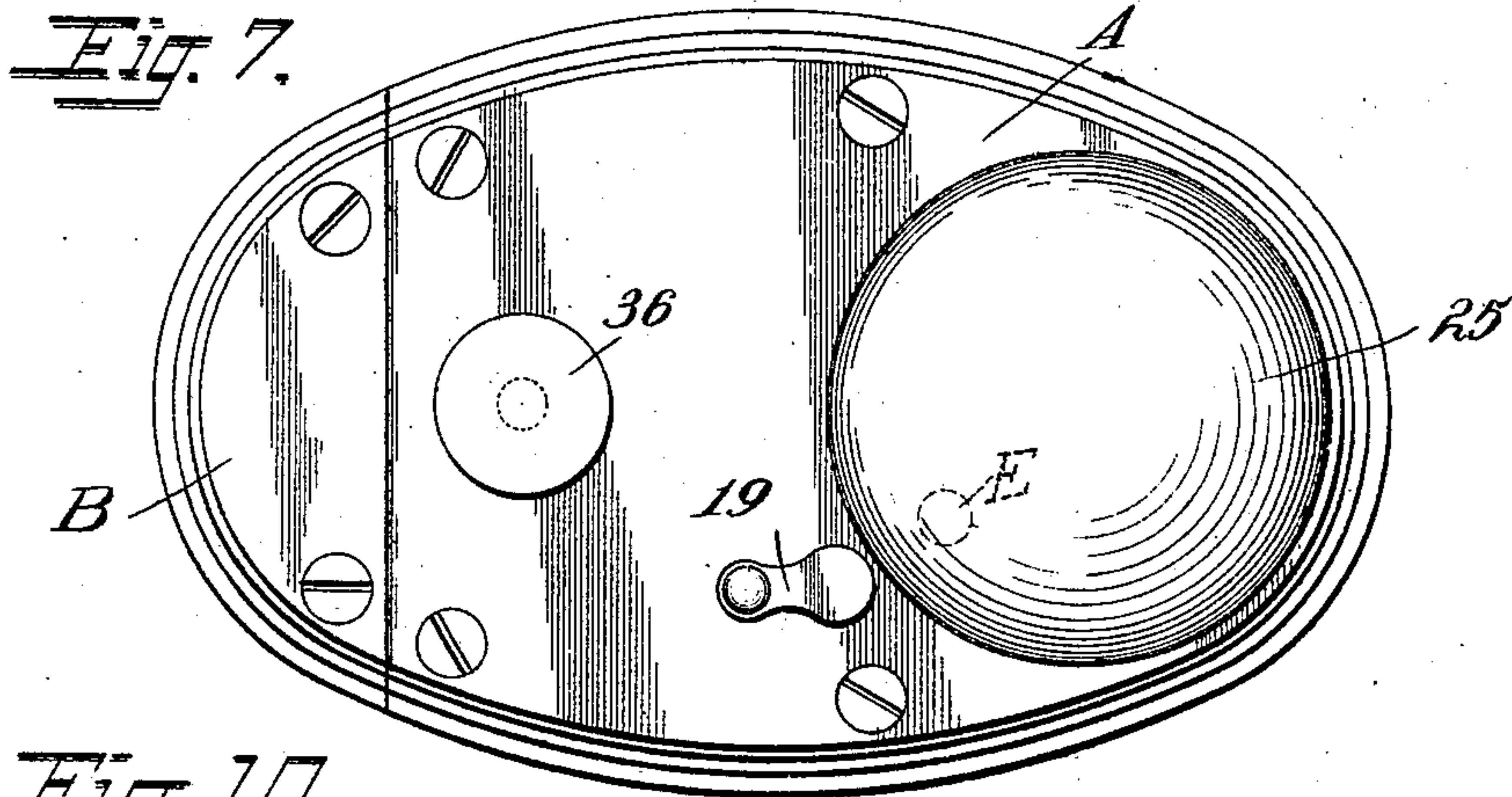
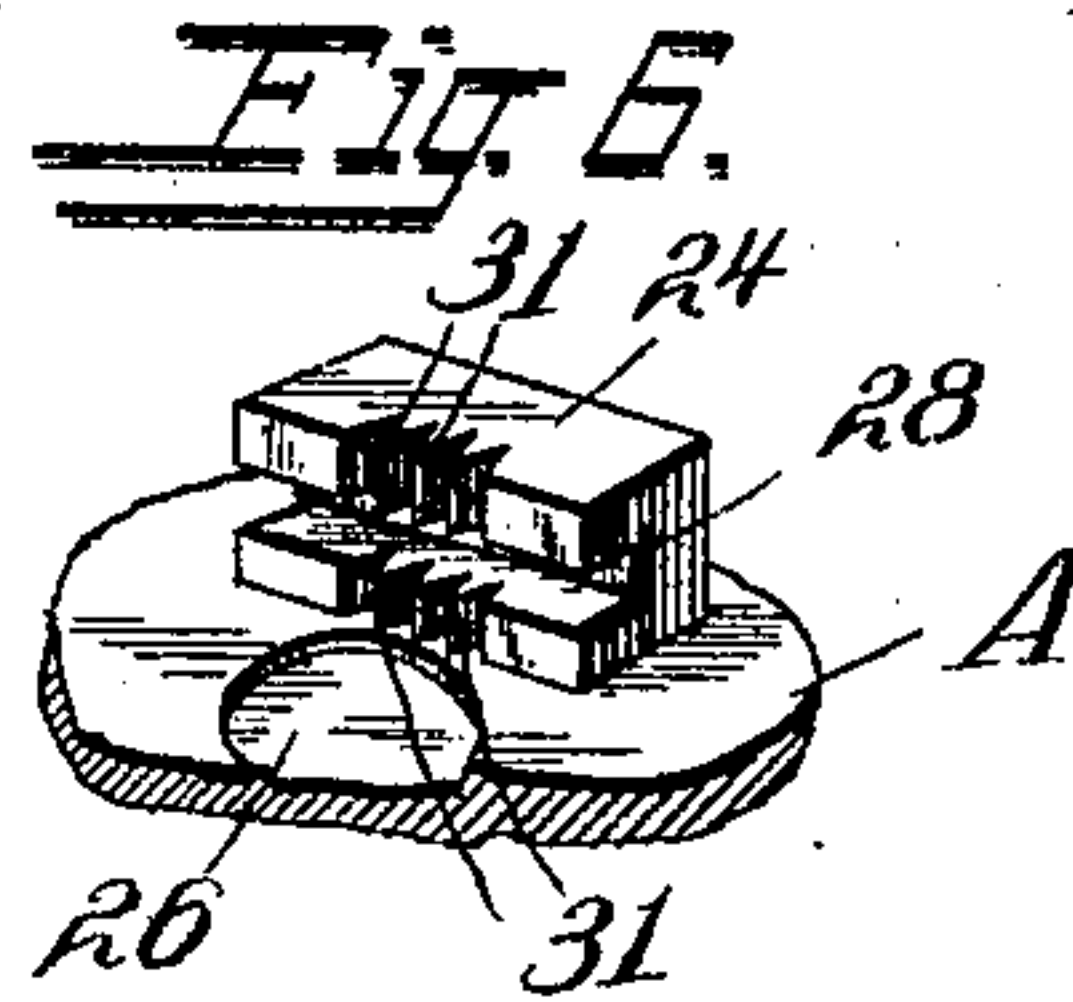
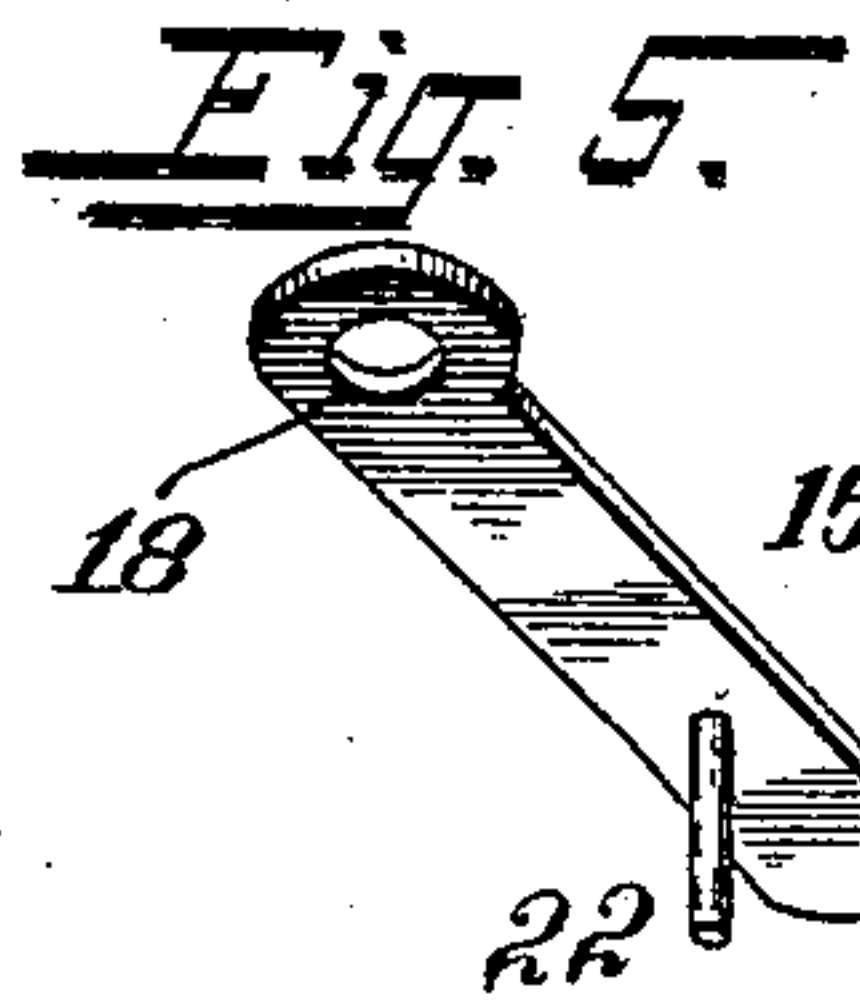
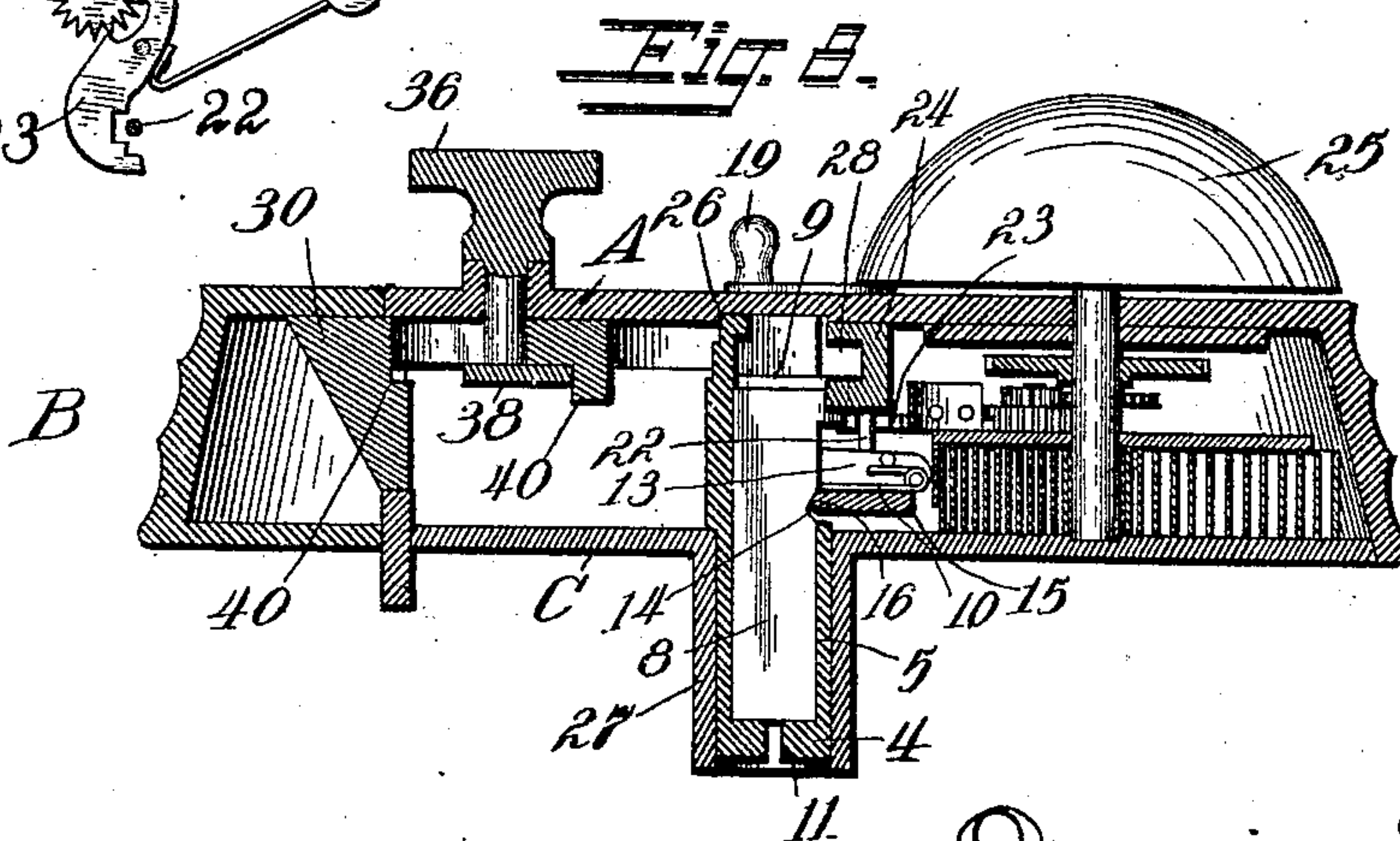
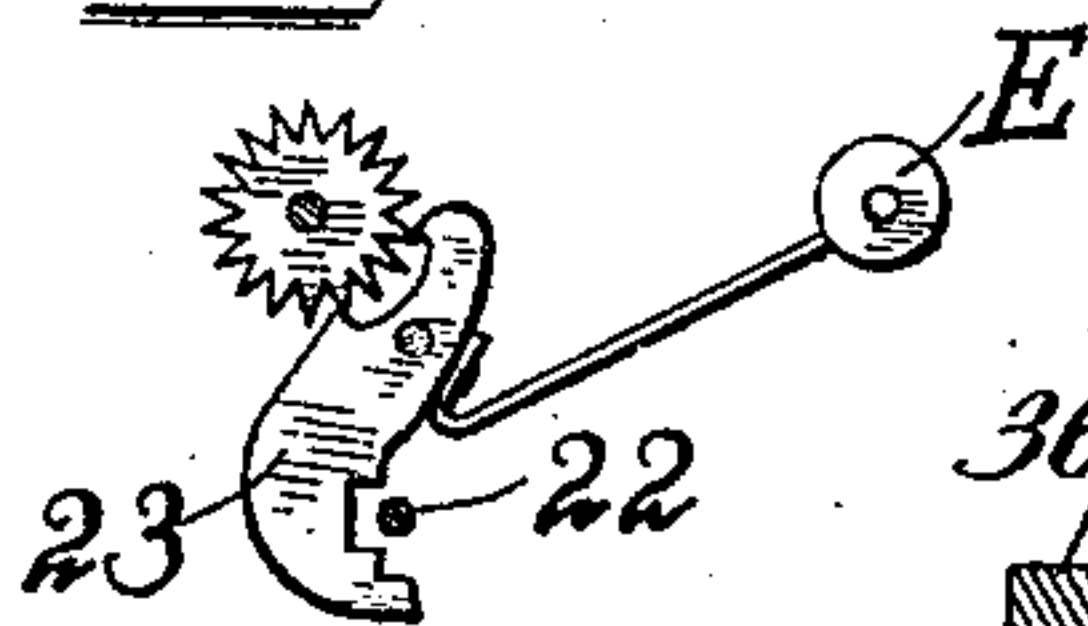


Fig. 10.



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# UNITED STATES PATENT OFFICE.

OTTO MILLER AND PHILIP KUNZINGER, OF BROOKLYN, NEW YORK.

## ALARM-LOCK.

No. 855,469.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed November 25, 1904. Serial No. 234,259.

*To all whom it may concern:*

Be it known that we, OTTO MILLER and PHILIP KUNZINGER, citizens of the United States, and residents of the borough of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Alarm-Locks, of which the following is a specification.

Our invention relates to an improvement in alarm locks, the object being to provide a lock of such construction that it may be set to sound an alarm the moment any thing is inserted in the key way, and one or more tumblers are moved from their normal position, whether it be a key or other device.

Another object is to provide means for preventing the operation of the lock by means of a skeleton or other key not designed for this particular lock, and to carry out this object our present invention comprises a peculiarly constructed locking bar, having notches in position to receive projections on the tumblers whereby to prevent the key from turning except when the correct key is inserted and these projections are alined in a recess or slot in the locking bar, which recess or slot affords clearance for the projections and permits them with the key and key way, to turn and throw the lock.

Still another object is to provide means for throwing the alarm in or out of operative adjustment, and also to provide means for moving the latch, and locking it in its removed position, from inside of the door or house without the use of a key.

With these several objects in view our invention consists in certain novel features of construction and combinations of parts, which will be more fully explained hereinafter and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view looking into the lock, with the face plate removed, as well as the key way, and bell-operating lever. Fig. 2 is a similar view showing all of the parts assembled and in position. Fig. 3 is a detached view of the key way. Fig. 4 is a vertical section through the latter. Fig. 5 is a view of the operating lever. Fig. 6 is a detached view of the locking bar. Fig. 7 is a view of the front or outside of the lock. Fig. 8 is a section through the entire lock. Fig. 9 is a modification. Fig. 10 is a detail.

A represents the case of the lock, B is the keeper, and C is a removable face plate held in position by a screw 1 which extends

through a countersunk hole 2 in the face plate into the hole 3 inside the lock case.

Within the lock case the various working parts of the lock are confined, and these will now be described. A key-way 4 is hollowed out through the center as at 5 to receive a set of endwise slidable tumblers 6, 7, 8 and 9, which of course might be varied in number, although we have shown but four in the present instance. These tumblers are arranged preferably side by side, and their upper ends extend up into the key-way where they are normally held by springs 10, 10, bearing outwardly upon them. These tumblers are limited in their outer movement, by engaging the outer ends of the hollowed out center portion of the key way. The key-way is slotted across its outer end as at 11, to receive a flat key 12, for operating the tumblers, and the inner movement of the key is limited by striking the inner end of the slot 11.

Each tumbler is provided at a point immediately above the arms 13, 13, and the point where the springs engage them, with cams 14, 14, which cams are normally in alignment, just above these arms, and when thus alined afford a recess for the operating lever 15, which normally extends therein while resting and being supported upon the arms 13, 13. This operating lever 15 is preferably rounded, slightly, on the edge toward the tumblers, as shown at 16, and the cams on the tumblers singly or unitedly, by being pressed in against this rounded edge of the operating lever, by a key or other means inserted in the key way, operate to force the operating lever aside or away from its normal position, whereby to sound the alarm. To provide for this action, the operating lever is pivoted at one end by means of a journal 17 in the bearing 18. One end of this journal extends to the outer surface of the lock case, where it is provided with a handle 19 by which the lever may be thrown into operative position, into the recess formed adjacent to the cam on the tumblers, or out of this position, as desired to render the alarm operative or not, that is, to throw it into or out of operative adjustment, and a spring catch 21 is provided for locking the operating lever in each of the extreme positions. A pin 22 projecting from the operating lever is located in position to engage a dog 23 on one end of which a bell clapper E is secured, Figs. 1 and 10, whereby to lock the latter against movement when the operating lever is in either of



its extreme positions, into which positions it can only be thrown by turning the handle 19 from outside of the lock. The bell or alarm rings only when the lever is in the intermediate position where it is moved and left by one or all of the cams on the tumblers, forcing it aside, and when in this intermediate position the pin 22 does not engage and hold or lock the dog 23, which causes the clapper E to vibrate and ring the bell.

By referring to Fig. 8, it will be seen that the tumblers each have recesses 14. These are normally in alinement as shown in Fig. 4, forming the transverse groove in which an edge of the lever 15 normally rests as shown in Fig. 8, and it does not make any difference whether the tumblers have the projections 29 or not, so far as the displacement of this lever 15 is concerned, and that is the purpose of the construction illustrated in Fig. 9. A wire, tooth-pick, or match inserted and engaging one end of the tumblers cause the lever 15 to move aside and when the pin 22 assumes an intermediate position with respect to the part 23, the clapper E begins to vibrate and the bell rings continuously until stopped by someone inside of the house or until the spring runs down. The spring 21 is a slight plate spring with a projection stamped in it, as shown by the circle. This projection is adapted to enter one of the depressions shown in lever 15, when in either of its extreme positions, as shown for instance in Fig. 2, and in which position the bell is kept from ringing. The pressure of this plate spring 21 is so slight that the cam surface of the notch 14 of a tumbler is sufficient to move the lever 15, and disengage the projection on the plate spring 21 from the depression.

From the foregoing it will be seen that when the alarm is set for operation the operating lever is swung over into the recess formed adjacent to the cams on the tumbler, in the path of the cams, where the slightest inward movement of the tumblers or any one of them causes it to be forced aside, the pin to disengage the dog, thereby vibrating the bell clapper E which continues to ring continuously until the spring or other actuating means runs down or it is stopped by somebody from inside the room moving the handle, and swinging the operating lever to either of its extreme positions. It is not necessary that a key be the instrument inserted. Anything which will force one or more of the tumblers inward the slightest degree when the alarm is set, will cause the alarm to sound. While we have shown a spring actuated alarm, it is obvious that an electric or other form of bell or alarm might be employed. In the one illustrated, the spring is rewound at any time, by simply taking hold of the bell 25, and turning it until the spring is sufficiently tight.

The key-way is journaled at one end in a bearing 26, and at the opposite end in a sleeve 27 projecting from the face plate.

A locking bar 24 is provided for preventing the key-way from turning with any key or other instrument excepting the one intended, and for this reason, it is provided with a transverse centrally located slot or recess 28, which is adapted to receive the projection 29, 29, on the tumblers, when the latter are alined by the proper key being inserted in the key way, the width of this slot or recess being practically that of the projections, whereby to receive and afford clearance for the latter when they are alined within the slot or recess to permit the key way to be turned by the key to throw the bolt or latch 30. Notches 31, 31, in the locking bar located both above and below the slot or recess receive and permit the projections on the tumblers to slide freely in and out, but they afford means for preventing the key way from being turned except when the projections are alined and within the slot or recess, the function of these notches and projections, therefore, being to absolutely prevent the throwing of the latch or bolt except as stated, under the conditions provided, namely, when the proper key is inserted and then only, as otherwise one or more of the projections will always be in as many notches thereby preventing the key way from turning. The latch or bolt 30 is forced outward by a spring 33, and it is provided with a lug 34 in position to be engaged by a finger 35 on the key way, which throws the latch or bolt when the latter is turned.

A knurled knob 36 is provided on its inner end with a catch 38, which has a rounded cam portion 39 at one end adapted to engage a flange 40 on the latch or bolt, whereby to force the latter inward and by turning a catch as far as it will turn it locks the bolt in its inner position, thus making it inoperative, or this knob may be used simply to unlatch the door from the inside without locking and rendering the bolt or latch inoperative.

It is not necessary that all of the tumblers should have projections. In other words, some might be blank as shown in Fig. 9. In this form the outer tumblers 6<sup>a</sup>, 9<sup>a</sup>, have no projections, but the tumblers 7<sup>a</sup>, 8<sup>a</sup>, have projections at *a*.

This lock is simple, comprises few parts and is effectual in the performance of its functions.

Slight changes might be resorted to in addition to those suggested without departing from the spirit and scope of our invention, and hence we do not wish to be limited to the precise construction herein shown and described, but:—

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:—

1. In a lock, the combination with an



alarm, of a key way having a series of tumblers located in the path of the key when inserted in the lock, and means on the tumblers whereby the alarm will be sounded by the displacement of any one or all the tumblers from their normal position.

2. In a lock, the combination with an alarm of any approved form, of a key way having lock-controlling tumblers located in the path of the key when inserted in the lock, each tumbler having means thereon for setting the alarm in operation when displaced from its normal position.

3. In a lock, the combination with an alarm, and an operating lever for controlling the alarm, of a key way, lock-controlling tumblers therein located in the path of the key when inserted in the lock, said tumblers each provided with means for actuating the operating lever, when one or more of the tumblers are moved from the normal positions to cause the alarm to sound.

4. In a lock, the combination with an alarm, of a key-way having tumblers located in the path of the key when inserted in the lock, each of said tumblers provided with means for causing the alarm to sound and means on said tumblers for operating the lock.

5. In a lock, the combination with an alarm and an operating lever for controlling the latter, of a key-way having spring actuated sliding tumblers therein, cams on each of the tumblers, the lever adapted to be normally placed adjacent to said cams in position to be forced aside by any one of them when moved from its normal position whereby to cause the sounding of the alarm.

6. In a lock, the combination with an alarm, and an operating lever for controlling the alarm, of a key way, tumblers therein located in the path of the key when inserted in the lock, said tumblers each provided with means for actuating the operating lever when one or more of the tumblers are moved from their normal positions to cause the alarm to sound, and means easily accessible for setting the operating lever to render it active or inactive.

7. In a lock, the combination with an alarm, and a sliding latch or bolt, of a key way journaled in the lock, tumblers therein, each tumbler provided with a cam, said cams normally in alinement, an operating lever adapted to normally rest in the path of said cams, its function being to control the alarm and cause the latter to sound when displaced from its normal position by any one of the tumblers being moved inward and its cam engaging said operating lever, and means on the key way for throwing the latch or bolt.

In testimony whereof, we have signed this specification in the presence of two subscribing witnesses.

OTTO MILLER.  
PHILIP KUNZINGER.

Witnesses:

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WATTS T. ESTABROOK.