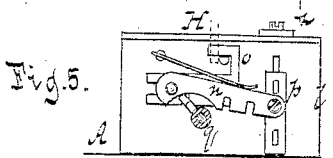
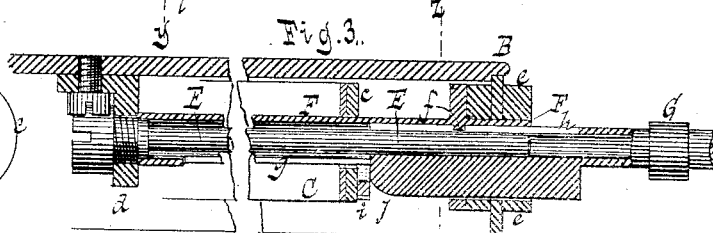
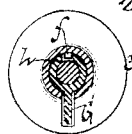
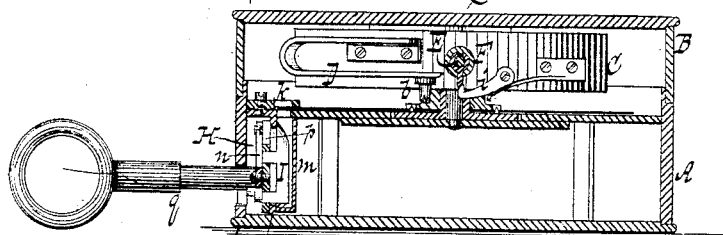
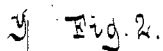


No. 217,620.

Patented July 15, 1879.



Witnesses
Otto Shufeland
Wm Miller.

Inventor:
Friedrich Imhaeuser
by
Van Gantvoord & Haupt
his attorneys.

UNITED STATES PATENT OFFICE.

FRIEDRICH IMHÆUSER, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN WATCHMEN'S TIME-DETECTERS.

Specification forming part of Letters Patent No. **217,620**, dated July 15, 1879; application filed November 27, 1878.

To all whom it may concern:

Be it known that I, FRIEDRICH IMHÆUSER, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Watchmen's Time-Detectors, which invention is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an inverted plan view of the lid of my detector. Fig. 2 is a cross-section of the entire instrument. Fig. 3 is a cross-section of the lid in the plane of the line *x x*, Fig. 1. Fig. 4 is a cross-section of the key-arbor and key in the plane of the line *z z*, Fig. 3. Fig. 5 is a cross-section of the case in the plane of the line *y y*, Fig. 2, showing the locking mechanism.

Similar letters indicate corresponding parts.

One part of my invention relates to a novel arrangement of the spring-hammer for piercing or marking the dial in the lid of the time-detector. Prior to my invention this spring-hammer has been combined with a slide working in guides fastened to the inner surface of the lid; but this arrangement is objectionable for the reason, among others, that the guides are liable to fill with dust or dirt or other substances, which have the effect of impeding the movement of the slide, so that the hammer does not always move or return to the proper position to insure a correct operation of the instrument.

My invention consists in combining with the lid of a watchman's time-detector a spring, which is secured to the inner surface of said lid at a short distance therefrom, and a hammer, which is attached directly to said spring, in such a manner that when a key is inserted into the lid the spring and the hammer are thereby displaced, and the bit of the key is allowed to act on the hammer, while at the same time the spring is not liable to be clogged up by dirt, and the hammer is invariably brought to the required position. This arrangement of the hammer also simplifies the construction of the instrument.

Another part of my invention consists in the combination, in a time-detector, of a rotating key-arbor or rotating barrel surrounding the arbor, having a radial lug, a spring-dog engaging with said arbor or barrel, and

a key which has a longitudinal slot to receive said lug, and whose bit is beveled at its forward end, to adapt the same for disengaging the spring-dog.

Another part of my invention relates to a novel arrangement of the marker of a time-detector—namely, the device for indicating on the dial the fact and the time when the lid has been opened; and consists in the combination of a marker inclosed in a suitable case with the case of the instrument and with the mechanism for locking the lid, in such a manner that by one and the same impulse of the locking-key the locking mechanism is actuated and the marker is caused to protrude or project from the face-plate of the case, thereby cutting the edge of the dial which may be placed on the face-plate, so that while the correct operation of the marker is insured the same is difficult of access, and cannot easily be tampered with, while the same also is not liable to get out of order, and the fragments of paper that may become detached from the dial by the action of the marker are received in the inclosing-case of the latter, and do not disturb the clock-movement.

In the drawings, the letter A designates the case, and B is the lid, of a watchman's time-detector. C is a spring situated within the lid, and D is a hammer attached to said spring. In the example shown the spring C is bent to a heart shape, and its two ends are secured to the inner surface of the lid B by a bracket, *a*, the spring being so arranged that it does not actually touch the inner surface of the lid; but the spring may also be made of other shapes, and one end thereof may be left free.

The hammer D consists of a bent spring carrying a pin or marker, *b*, and it is fastened to the spring C by means of a re-enforcing strip, *c*. By the action of the spring C the hammer D is held in a forward position while the spring yields to the action of a key, so that the latter can be pushed to the required position for operating the hammer.

If desired, the hammer may be duplicated, or incisions may be made in the metallic spring D, composing the base part thereof, to divide the same into a series of springs, one or more of which may be operated by a single key.

The letter E designates the key-arbor, and F is a barrel surrounding the same, the latter being of such diameter that the key introduced into the instrument is received within the barrel. The key-arbor E is attached to the interior of the lid B by means of a lug, *d*, which is so arranged that the free end of the key-arbor and its barrel are brought opposite to a key-hole formed in the rim of the lid. The barrel F is placed loosely on the key-arbor, so that it can rotate, the same being kept in a concentric position by means of an escutcheon, *e*, surrounding the key-hole, and at a suitable point on the inner surface of the barrel is formed or secured a lug, *f*. (Best seen in Fig. 3.) In the barrel F is also formed a longitudinal slot, *g*, to receive the bit of the key.

The letter G designates one of a series of keys used in connection with my instrument. In the back of this key I form a longitudinal slot, *h*. (Best seen in Fig. 3.) When the key G is pushed on the key-arbor the slot *h* of the key receives within it the lug *f* of the barrel, and the key-bit is brought into and protrudes from the slot *g* therein. The key is thus allowed to turn and act on the hammer after it has been shoved in a proper distance, and the barrel is caused to partake of its motion.

In some cases the barrel F is omitted, when the lug *f* is secured to the key-arbor and the latter is arranged to rotate.

For the purpose of retaining the rotating barrel or the rotating key-arbor, as the case may be, in a normal or appropriate position relatively to the key-hole, I make use of a spring-dog, *i*, which automatically engages with the barrel or arbor when, in the revolution of the key, the same is brought to its normal position, and which is displaced by the bit when the key is introduced, for which purpose this bit is beveled at its forward end, as at *j*, Fig. 3. When the barrel F is used, the spring-dog *i* is made to catch in the slot *g* thereof, as shown in Fig. 1.

In the example shown the spring-dog *i* is fastened to the hammer-carrier C; but the same may, if desired, be secured to a suitable part of the lid.

In a suitable part of the case A is arranged mechanism for locking the lid B to the case, as at H. The letter I designates a marker, which is connected with said locking mechanism and arranged beneath an opening, *k*, formed in the face-plate of the case, so that when the locking mechanism is actuated by a suitable key, in order to lock or unlock the lid, the marker is raised and caused to protrude from said opening. The opening *k* is located on or within the circle described by the dial fastened on the face-plate of the case, so that when the marker is raised it defaces the edge of the dial. The locking mechanism H is af-

fixed to one side of a partition-plate, *l*, while the marker is situated on the other side of this plate, and is inclosed by a case, *m*. This case receives any fragments of paper or other substances that may pass through the opening *k*, so that the clock-movement is not affected or disturbed thereby.

The locking mechanism H consists of a spring-tumbler, *n*, (best seen in Fig. 5,) which carries a bolt, *o*, to engage with a hook projecting from the lid, and carries a slide, *p*, to which the marker I is connected by lugs passing through a slot in the partition-plate, so that when the locking-key *q* is turned both the bolt and the marker are moved.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a time-detector, the combination, with the lid or cover B, of a spring secured to said lid, at a short distance from its inner surface, and one or more hammers attached directly to said spring, whereby the spring is relieved from being clogged up by dirt, and the hammer is made to adjust itself readily and without fail in the required position, substantially as described.

2. The combination, with a watchman's time-detector, of the rotating key barrel or arbor, having a lug, *f*, projecting radially from the surface of one of its sides, and a longitudinal groove, *g*, formed in the opposite side, for operation in connection with a key having in its back edge a longitudinal slot or groove, *h*, adapted to the radial lug *f*, and a bit adapted to the longitudinal slot or groove *g* in the rotating barrel or arbor, substantially as shown and described.

3. The combination, in a time-detector, of a rotating key-arbor or rotating barrel surrounding the key-arbor, having a radial lug, a spring-dog engaging with said arbor or barrel, and a key which has a longitudinal slot to receive said lug, and whose bit is beveled at its forward end, to adapt the same for disengaging the spring-dog, all constructed and operating substantially as described.

4. The combination, in a time-detector, of a marker, which is situated in the case of the instrument and operated by the locking-key, and of a case inclosing said marker, whereby any substances passing down through the opening formed in the face-plate to receive the marker are prevented from disturbing the correct operation of the clock-movement, substantially as described.

In testimony that I claim the foregoing I hereunto set my hand and seal this 22d day of November, 1878.

FRIEDRICH IMHÄUSER. [L. s.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.