

W. W. Le GRANDE.
Watchman's Time-Detector

No. 196,913.

Patented Nov. 6, 1877.

Fig. 1.

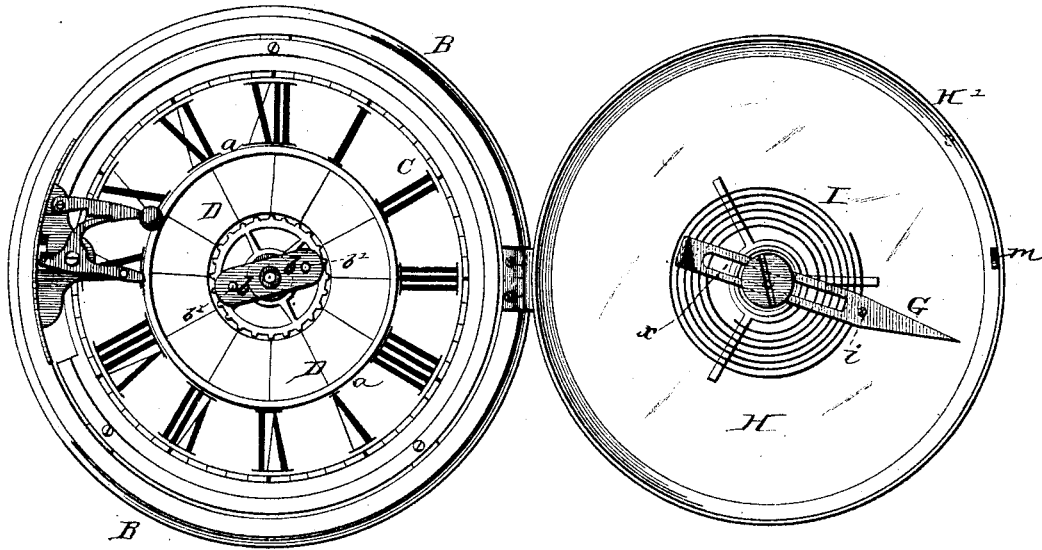


Fig. 2.

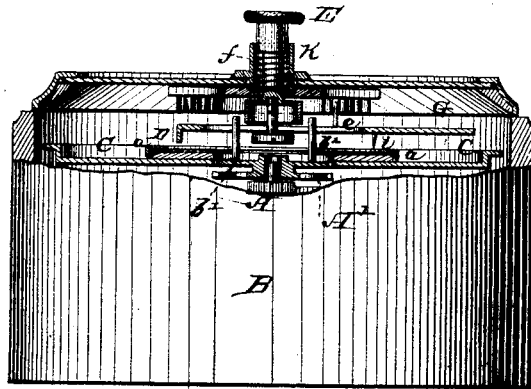
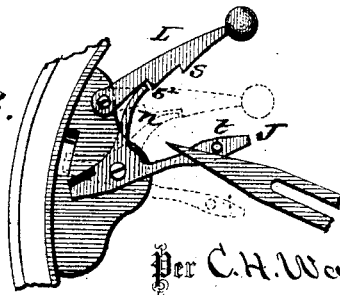


Fig. 3.



Witnesses:

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Fig. 4.

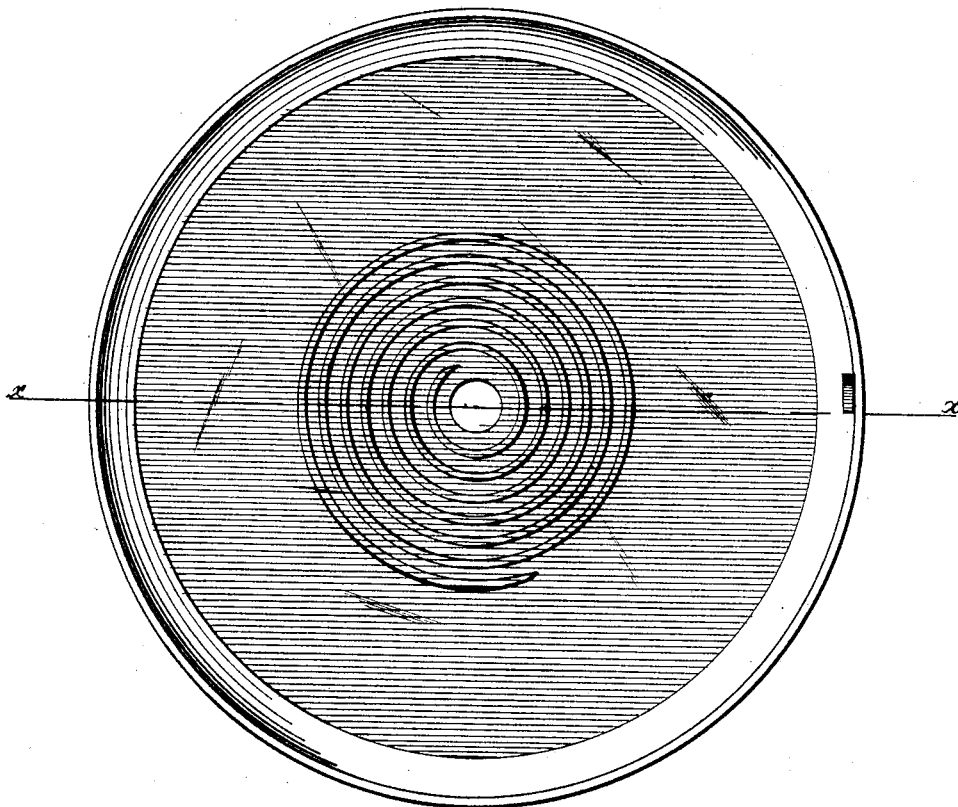
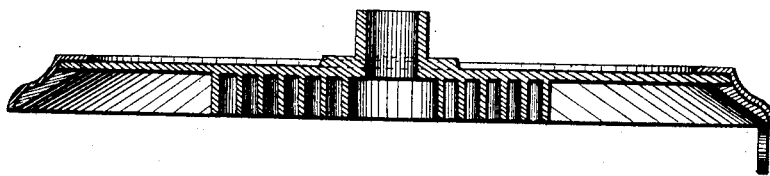


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM W. LE GRANDE, OF LOUISVILLE, KENTUCKY.

IMPROVEMENT IN WATCHMEN'S TIME-DETECTERS.

Specification forming part of Letters Patent No. **196,913**, dated November 6, 1877; application filed October 22, 1877.

To all whom it may concern:

Be it known that I, WILLIAM W. LE GRANDE, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Watchmen's Time-Detectors; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 of reference marked thereon, which form a part of this specification.

My invention relates to watchmen's time-detectors; and it consists in certain improvements thereon, as will be hereinafter more fully set forth, and pointed out in the claims.

In the annexed drawings, which fully illustrate my invention, and to which reference is made—

Figure 1 is a front view of my improved watchman's time-detector with the front thrown open. Fig. 2 is a section of the same with the front closed. Fig. 3 is an enlarged detailed view of the locking device for the front of the time-detector. Fig. 4 is an inside view of the glass front with spiral in glass; and Fig. 5 is a section of the same on the line *x x*, Fig. 4.

Heretofore watchmen's time-detectors have been made with a series of keys to work the registering devices. This is objectionable, as the keys can readily be counterfeited, and if a watchman or other person has in his possession a duplicate key for locking or working in any way a registering time-detector, such detector is thereby rendered worthless for the purposes for which the same is intended.

Time-detectors are also made to lock up with a key inserted in a key-hole in the usual manner. This, also, is objectionable, as clocks and watches for this purpose are generally made of light material, and, consequently, when left with a hole in them, are not infallible time-registers. It is also troublesome to find keys, and to place them in proper position for working a time-detector at night entails trouble, and consumes valuable time of the watchman.

Another serious objection to the time-detectors now in use is the handling of the move-

ment daily in order to change the devices, which is liable to retard the movement of the train.

The object of my invention is to obviate these and other difficulties, and provide a watchman's time-detector that shall possess the following novel features and improvements: First, a watchman's time detector or register that will run eight days or more without being opened or changed; second, that is automatic in changing the registering device from day to day as long as the clock is in motion; third, that has no key or key-hole; fourth, that is securely locked by closing the door; fifth, that is unlocked by the clock-movement at any time required within the term of the movement; sixth, that will answer the purpose of a time-piece for a factory or other place by day and a time-detector by night; seventh, that will show at a glance the time each night and morning that a watchman or other person comes on or goes off duty during a week back or more; eighth, that cannot be unlocked until the expiration of a fixed time.

To accomplish these objects the clock mechanism A, of any suitable construction, is arranged with an eight-hour or pendulum movement, in a suitable case, B.

The dial C is raised in the center, as shown, to receive a disk, D, of paper or other substance, held in place on the dial by a rim, *a*, as shown. To the hour-wheel A' of the clock mechanism is secured a cross-bar, *b*, with two pins, *b*¹ *b*², forming a double verge; which projects upward through the dial to receive the registering-hand G. This hand is secured to a depressing-button, E, in the glass front H.

The hand G has a longitudinal slot, *x*, of sufficient length to allow the hand to move lengthwise on the verge a distance equal to half the diameter of the spiral I on the inner side of the glass front H. The hand fits loosely on the verge, the pins *b*¹ *b*² passing up through the slot in the hand, so that it can be easily depressed for the purpose of puncturing the disk D by means of a pin, *i*, projecting inward from the hand.

On the center of the glass front H is pressed or cast a sleeve, *k*, in which a spiral spring, *f*, is placed, and through which the button E is passed. Around this sleeve, on the inner sur-

face of the front H, is pressed a spiral groove, I, to receive a guide-pin, *e*, which is fixed in the hand G, and works in said spiral for the purpose of pushing the hand endwise during its circuit over the dial, thereby giving it a new circuit to go over each day.

The spiral in the glass corresponds in diameter to the raised surface on the dial; hence the registering-pin *i* will, when the hand is depressed, puncture in a new circuit each day until the guide-pin *e* has traversed the length of the spiral guide. This outward movement of the hand, giving the puncturing-pin a new circuit each day, requires only one disk, D, per week or during the time the clock will run, thereby obviating the necessity of disturbing the clock daily, as is customary with time-detectors now in use.

The sleeve *k* and spiral guide I may be made separate and attached to the front H, as represented in Figs. 1 and 2; but they are preferably pressed in or cast with the front in one piece.

The hand G, being connected to the glass front, is not in the way when the disk is being changed.

The sash H' containing the glass H is hinged to the frame B in the usual manner, and provided with a catch, *m*, having a notch near the end to receive the lever-latch J, pivoted to a plate inside of the casing B. The latch J is provided with a curved arm, *n*, as shown. Above the lever-latch J is pivoted a second lever, L, with a weight upon its end, and two notches, *s s'*, in the lower edge to hold the latch in proper position, so that when the sash is closed the catch *m* on the sash will, by coming in contact with the beveled edge of the latch J, push it out of the way until the notch in said catch *m* receives the latch.

The weighted lever L rests with the first notch *s* on the end of the curved arm *n*, and thereby holds the latch J securely in the notch of the catch until the registering-hand G strikes a pin, *t*, projecting from the latch J, when it moves up, and the arm *n* raises the lever L until the end thereof catches in the second notch *s'*, thus holding it unlocked until the party in charge of the clock can have time to readjust it.

It being understood that the clock is fixed to a wall permanently, it will readily be seen that no access can be had to the registering device until the time for which it may be adjusted—say, every eight days or more.

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

1. In watchmen's time-checks, a gradually-moving registering-hand that is automatically moved in a radial line by the clock-train while performing its circuit over the dial, for the purpose hereinbefore set forth.

2. A radially-sliding registering-hand connected to the glass front of the clock, and moving with it when the same is opened, for the purposes herein set forth.

3. A radially-sliding registering-hand connected to the glass front of the clock, and operated by an exterior spring-button for puncturing the disk, substantially as herein set forth.

4. The combination of a radially-sliding registering-hand, provided with a projecting guide-pin, and a spiral guide attached to or formed on the inside of the glass front, for the purposes herein set forth.

5. The combination of a radially-sliding registering-hand, a clock mechanism for rotating the same, and a spiral guide for sliding it radially, substantially as herein set forth.

6. In a watchman's time-detector, a locking device for locking the clock automatically and unlocking the same by the action of the registering-hand, substantially as herein set forth.

7. The combination of a rotating and radially-sliding registering-hand and a locking device opened only at set times by said hand, for the purposes herein set forth.

8. The combination of a clock mechanism, a spiral guide, a rotating and radially-sliding registering-hand, and an automatic locking device, substantially as and for the purposes herein set forth.

9. The combination of the latch J with curved arm *n* and the weighted lever L, having notches *s s'*, substantially as and for the purposes herein set forth.

10. In a watchman's time check or register, a front having a spiral groove in the inner surface, substantially as shown and described, for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM W. LE GRANDE.

Witnesses:

WM. P. UPPERMAN,
FRANK GALT.