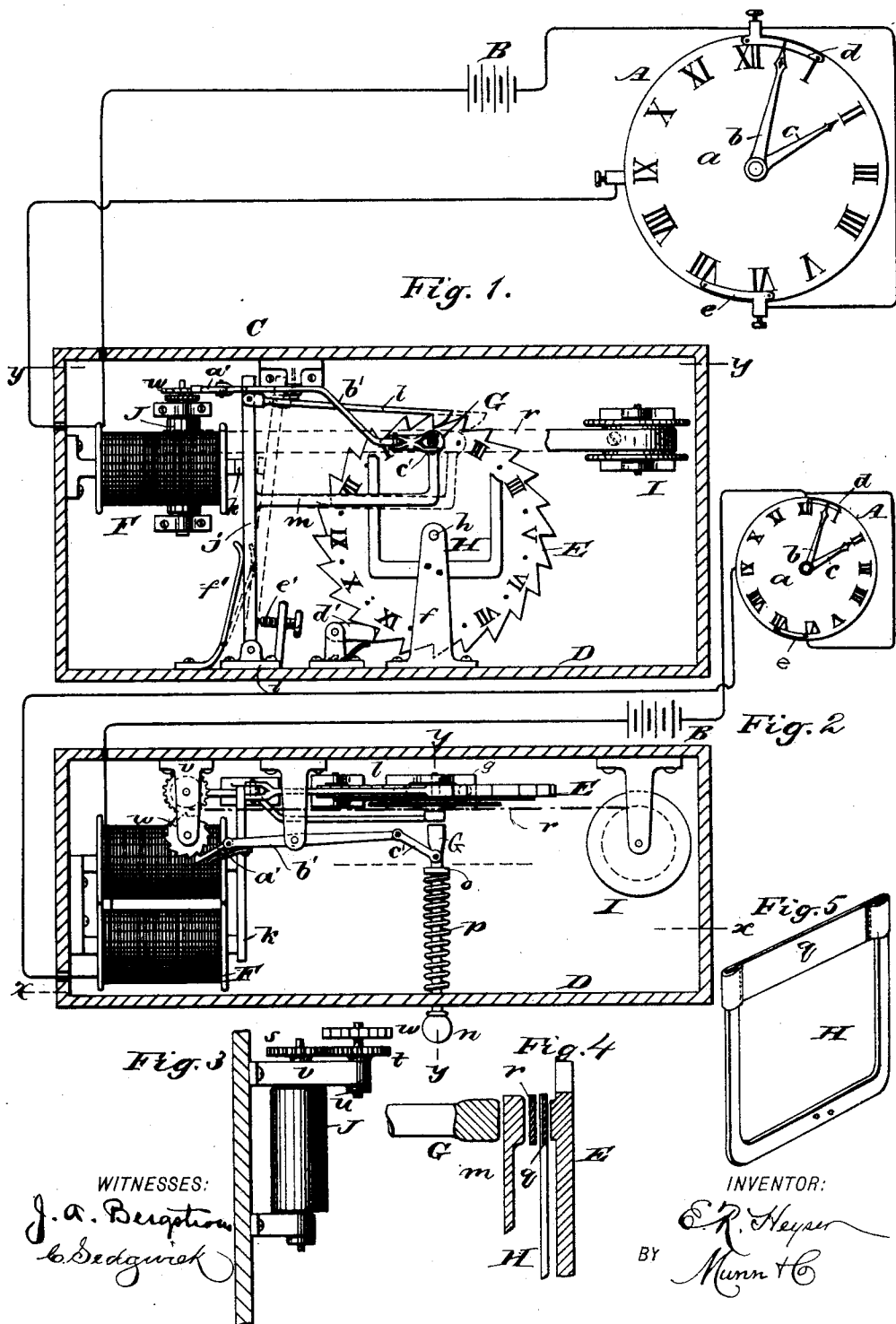


(No Model.)

E. R. HEYSER.
WATCHMAN'S ELECTRIC TIME RECORDER.

No. 482,251.

Patented Sept. 6, 1892.



UNITED STATES PATENT OFFICE.

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WATCHMAN'S ELECTRIC TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 482,251, dated September 6, 1892.

Application filed March 2, 1892. Serial No. 423,496. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL R. HEYSER, of Leon, Mexico, have invented a new and Improved Watchman's Time-Check, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side sectional elevation of my improved apparatus, taken on line *xx* in Fig. 2. Fig. 2 is a horizontal section taken on line *yy* in Fig. 1. Fig. 3 is an enlarged side elevation of the paper-moving roll. Fig. 4 is an enlarged vertical transverse section taken on line *yy* in Fig. 2, and Fig. 5 is a perspective view of the ink-ribbon holder.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to construct a simple and effective watchman's time-check which will indicate the presence or absence of the watchman at a given point at certain intervals of time.

My invention consists in a time movement provided with electric circuit-closing devices for closing the electric circuit at stated intervals, a ratchet-wheel carrying figures representing the hours and dots for the half-hours, electro-magnetic apparatus placed in the circuit of the clock circuit-closer and provided with an armature-lever carrying a pawl for actuating the ratchet-wheel, a spring-actuated printing-bar for pressing the characters upon the printing-surface, means for intermitting the action of the printing-bar, and mechanism for moving the strip upon which the impressions are made, all as will be hereinafter more fully described.

The mechanism for closing the electric circuit of my improved apparatus consists of a clock A, having a dial *a* and hands *b c*, constructed and arranged in the usual way, and the electric contact-strips *d e*, secured to the dial at diametrically-opposite edges and covering a space equivalent to five minutes of time by the clock. The said contact-strips *d e* are insulated from the dial, and being in the path of the end of the minute-hand *b* are each touched once during one revolution of the minute-hand. The contact-strips *d e* are provided with binding-posts and are both connected with one pole of the battery B, the other pole of which is connected with the elec-

tro-magnetic check mechanism C, which is connected electrically with the movement of the clock A.

In standard *f*, secured to the bottom of the casing D, is journaled the shaft *h* of the ratchet-wheel E, said ratchet-wheel having on its periphery twenty-four teeth, and upon one side of said ratchet-wheel, opposite alternate teeth, are formed characters corresponding with those on the clock-dial and representing the hours of the day. Opposite intermediate teeth are located projections corresponding with the half-hours.

In one end of the casing D is fixed a magnet F, which is connected electrically with the battery B and with the movement of the clock A. To the bottom of the casing D is attached a plate *i*, to which is pivoted the armature-lever *j*, carrying an armature *k*, which is within the field of the magnet F. The armature-lever *j* is prolonged above the armature *k*, and to the extremity thereof is pivoted a hooked pawl *l*, which engages the ratchet-wheel E. The armature-lever *j* also carries an angled arm *m*, the end of which is enlarged, forming a platen of sufficient size to cover the characters formed on the ratchet-wheel. The arm *m* is rigid in a vertical direction, but is capable of swinging laterally when pressed by the printing-bar G. The said printing-bar G moves in guides in the casing D and one end thereof projects through the front of the casing and is furnished with a knob *n*, by which it may be drawn outwardly preparatory to releasing it for the purpose of printing. On the bar G is placed a collar *o*, between which and the front of the casing D is placed a spiral spring *p*. A forked arm II, secured to the standard *f*, carries an ink-ribbon *q* in front of the ratchet-wheel E and opposite the path of the characters, carried by the wheel. In front of the ink-ribbon is carried a strip *r* of paper, which is taken from a reel I, located at one end of the casing D and wound upon a reel J at the opposite end of the casing. The shaft of the reel J is provided with a spur-wheel *s*, which is engaged by a similar spur-wheel *t* on a shaft *u*, journaled in the arm *v*, which supports the upper end of the reel-shaft. The shaft *u* also carries a ratchet-wheel *w*, which is engaged by a spring-pressed pawl *a'*, pivoted to one

end of the lever *b'*, the other end of the said lever being connected with the printing-bar G by a link *c'*. The spring-pressed detent-pawl *a'* engages the ratchet-wheel *w* and prevents retrograde movement. The armature-lever *j* is held normally against the limit-screw *e'* by the spring *f'*, attached to the bottom of the casing and pressing against the said lever.

10 The operation of my improved apparatus is as follows: When the minute-hand *b* of the clock A makes a contact with the contact-strip *d* or *e*, the circuit of the battery B is closed and the magnet F is energized, drawing forward the armature *k*, and with it the armature-lever *j*. This operation moves forward the ratchet-wheel E one notch, bringing a dot or a character opposite the printing-bar G, at the same time bringing the end of the arm *m* between the said printing-bar and the paper strip *r*. If under these circumstances the watchman on duty withdraws and releases the bar G by grasping the knob *n* and releasing it, the impact of the bar upon the enlarged end of the arm *m* will press the paper strip *r* against the ink-ribbon *q*, which in turn is pressed against the projecting dot or character on the wheel E, thus forming on the paper an impression of the said dot or character. If the watchman does not pull the bar G during the time that the circuit of the battery B is closed on the magnet F by the clock A, the pulling of the rod will not produce an impression on the paper, as the armature-lever *j* is thrown back when the circuit is broken, thereby carrying the arm *m* out of the path of the bar G, thus preventing the bar G from exerting pressure on the wheel E and intermediate devices. In consequence of this no record can be made, and the paper strip will show a neglect of duty on the part of the watchman. Whenever the bar G is drawn out preparatory to making an impression, the pawl *a'*, through the medium of the link *c'* and lever *b'*, is made to engage the ratchet-wheel *w* and turn it, thereby turning the reel J and drawing forward the paper-strip so as to present a new surface for printing. As the electro-magnetic mechanism which turns the ratchet-wheel E is entirely independent of the printing mechanism, the said ratchet-wheel is turned one notch every half-hour, so that when the impressions on the paper do not show the hour and half-hour marks in regular succession the interval of the absence of the watchman from the instrument can be readily determined.

It is obvious that the printing-wheel E may be operated independently of the time-circuit-closing device, as under some conditions a push-button may be substituted for the time-circuit closer. It is also obvious that the

time-circuit closer may be usefully employed in other ways. Therefore I do not limit or confine myself to the exact combination or arrangement herein set forth.

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

1. In a watchman's time-check, the combination, with a clock and an electrical device connected therewith, of a printing-wheel operated by the electrical device and having its characters on one side, an ink-ribbon in front of the printing-wheel, a strip of paper in front of the ink-ribbon, a printing-bar to be operated by the watchman, and a platen moved in and out of the path of the printing-bar by the electrical device, substantially as described.

2. In a watchman's time-check, the combination, with a clock and an electrical device connected therewith, of a printing-wheel operated by the electrical device and having its characters on one side, an ink-ribbon in front of the printing-wheel, paper-reels mounted to allow the paper to pass in front of the ink-ribbon, a printing-bar to be operated by the watchman, a platen moved in and out of the path of the printing-bar by the electrical device, and means for rotating one of the paper-reels from the printing-bar, substantially as described.

3. In a watchman's time-check, the combination, with a printing-wheel, an inking-ribbon, and paper-reels, of a spring-pressed printing-bar to be operated by the watchman, a platen moved in and out of the path of the printing-bar, and mechanism between the printing-bar and one of the paper-reels for operating the said reel from the printing-bar, substantially as described.

4. In a watchman's time-check, the combination of the ratchet-wheel E, carrying characters representing the hours of the day, the electro-magnetic wheel-operating device consisting of the electro-magnet F, the spring-pressed armature-lever *j*, provided with the arm *m* and pawl *l*, adapted to engage the ratchet-wheel, the spring-pressed printing-bar G, arranged to press upon the arm *m*, and the electric generator and circuit-closer, substantially as specified.

5. The combination, with the time-printing mechanism, of the reel I, carrying the paper strip *r*, the reel J for receiving the paper strip, the ratchet-wheel *w*, the lever *b'*, the spring-pressed pawl *a'*, the link *c'*, and the printing-bar G, substantially as specified.

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Witnesses:

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