3 Sheets--Sheet 1.

W. J. PHILIPS.

Electric Signaling and Recording Apparatus.

No. 164,031. Patented June 1, 1875.

Fig. 1.

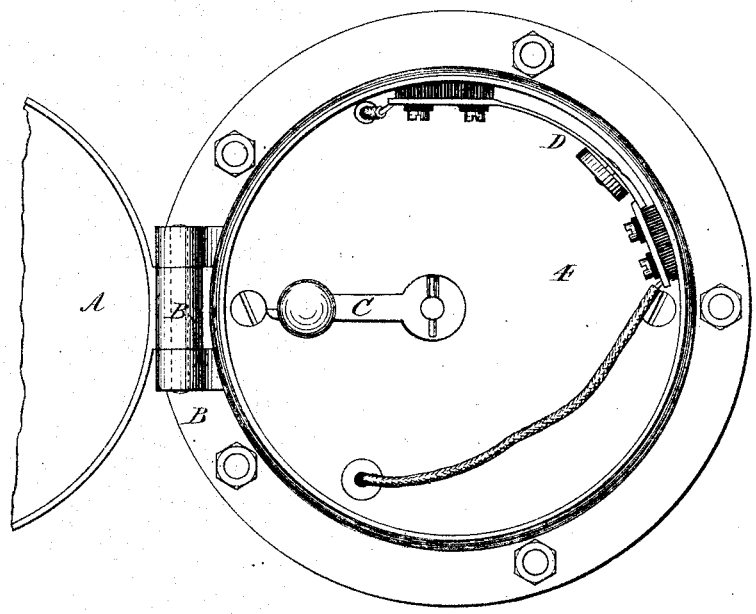
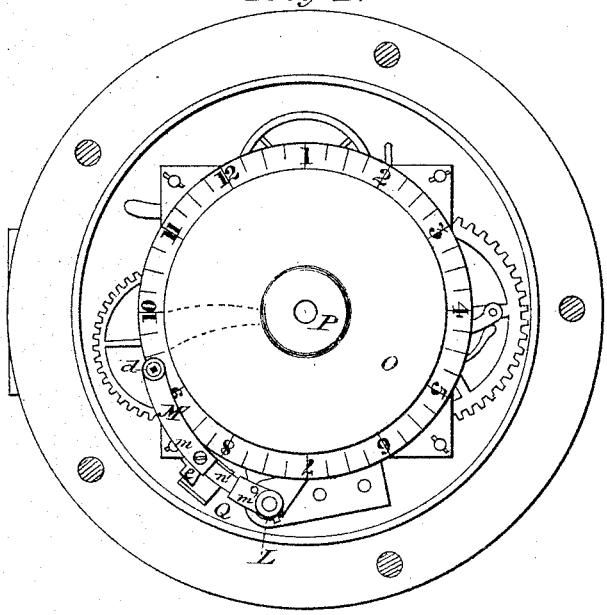


Fig. 2.



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3 Sheets--Sheet 2.

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Fig. 3.

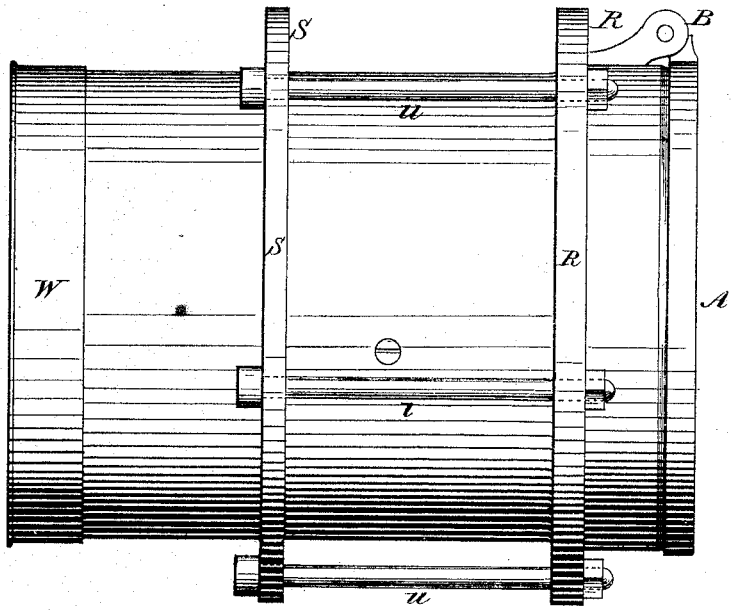
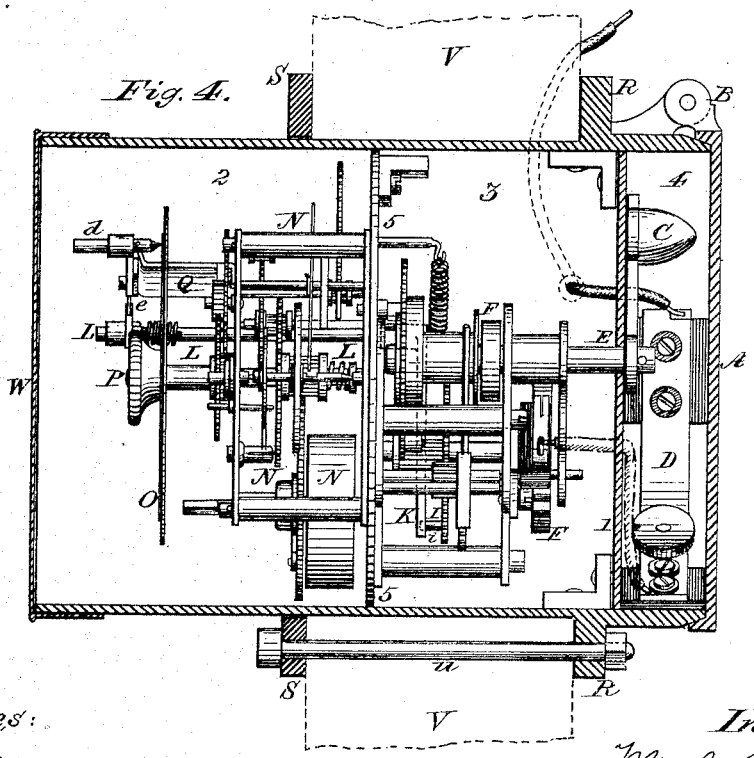


Fig. 4.



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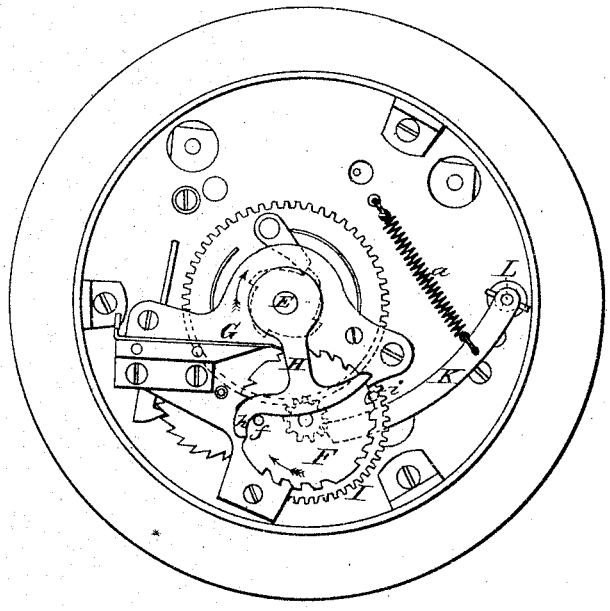
Electric Signaling and Recording Apparatus.

No. 164,031. Patented June 1, 1875.

Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM J. PHILIPS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ELECTRIC SIGNALING AND RECORDING APPARATUS.

Specification forming part of Letters Patent No. **164,031**, dated June 1, 1875; application filed April 28, 1875.

To all whom it may concern:

Be it known that I, WILLIAM J. PHILIPS, of the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Electric Signaling Apparatus; 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 pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to municipal and district telegraphs, in which signal boxes or stations are arranged in a closed electric circuit, and provided with a circuit-breaking device actuated by suitable mechanism, in such manner that one or more arbitrary signals may be transmitted to a central or main station whenever such mechanism is designedly set in motion, as by a person desiring to transmit a signal; and the present invention particularly relates to the combination with such signal-boxes and circuits of a means for automatically recording, upon a suitable surface inclosed within or located near the transmitting-instrument, the exact time the signal is sent from the station, thus affording a check upon the visits of a watchman. My invention therefore consists in combining a signal or alarm box with a time-piece or suitable machinery for accurately moving a dial or surface, and a pencil or marking device so arranged in relation to the mechanism of the signal-box that whenever the latter is actuated or caused to transmit a signal a mark will be made upon the dial or surface for future reference, and in certain other combinations and devices for carrying into effect this main feature of my invention, all as more fully hereinafter set forth and claimed.

In order that those skilled in the art may be enabled to make and use my invention, I will describe in detail the method of carrying it into effect, reference being had to the accompanying drawings, in which—

Figure 1 is a view of the end of the box at which the signal apparatus is operated. Fig. 2 is a view of the other end of the box, showing the arrangement for recording the times of operating the signal mechanism. Fig. 3 is a side view, showing the devices for fastening the box in position. Fig. 4 is a longitudinal section of the box. Fig. 5 is a plan view of the signal mechanism, taken in rear of diaphragm 1 1, Fig. 4.

By reference to Figs. 3 and 4 it will be seen that I make use of a double-ended box, preferably of cylindrical form. It is divided into three compartments, 2 3 4, by the diaphragms 1 and 5. The compartment 4 is provided with a cover, A, hinged at B, and in it is located the crank C, for operating the district alarm-signal mechanism, and a key, D, for use as an ordinary Morse key.

In 3, the alarm-signal mechanism and its motor are located, the shaft E thereof projecting through the diaphragm 1 into 4, where it receives the crank C. Upon the shaft E is the spring F, which is compressed by the rotation of the crank C, to impart motion on its release to the train of gearing driving the circuit or break wheel F, the shaft and spring being connected to the gearing by the usual pawl and ratchet, as shown, and the speed of the gearing being controlled by an escapement. G is the usual break-spring used in connection with the break-wheel. On the shaft E is a T-shaped arm, H, having one end of the cross-bar bent into a hook, *n*, against which takes the pin *f*, projecting from the wheel F, the two forming the stop for the wheel and gearing. Upon the crank C being turned it carries the shaft E and arm H in the direction of the arrow until its motion is stopped by H taking against a stop. (Not shown.) On releasing the crank, the shaft and arm are rotated in the reverse direction, while the break-wheel revolves in the direction of the arrow until *h* and *f* meet. Upon one of the wheels, I, of this train is arranged a pin, *i*, which takes once in every revolution of the wheel F against a lever, K, fastened to a shaft, L, capable of vibration. A spring, *a*, serves to hold K normally in one position, and to restore it to such position after being actuated by the pin *i*. It is evident that, if desired, the lever K may be brought in front of the wheel F, and the stop-pin *f* thereof actuate the same. This lever L extends through the intermediate diaphragm 5, as shown in Fig. 4, and carries at

its end an arm, M, formed of two parts, *m m'*, united by a spring-slip, *n*, which gives elasticity to the whole arm. In the end of M is mounted a lead-pencil or other marking device, *d*. With the lever K in its normal position, as in Fig. 5, the normal position of *d*, connected to and moving with K, through L and M, is as shown in Fig. 2. In compartment 2 is arranged any desired form of clock mechanism, N. Instead of actuating-hands, this mechanism carries a disk, O, covered with paper, or otherwise prepared to receive a mark, and divided off into hours and fractions thereof, as shown. It is secured to the central shaft of the clock-work by the knob P, and split friction-sleeve thereto attached, so that it may be readily removed from or placed upon the shaft. Upon one side of the disk is arranged a standard, Q, having a beveled upper edge, upon which slides a projection, *e*, of the arm M, whereby, in its normal position, the pencil *d* is held up and away from the disk. Now, it will be readily seen that if the clock-work N be going, whenever the signal mechanism is actuated to turn in an alarm, or to report the presence of a watchman, every time the break-wheel F revolves, the pin *i* will move the lever K, which motion will be communicated through L and M to the pencil *d*, causing it to mark upon the disk O, as is shown in dotted lines in Fig. 2.

The exterior of the box is provided with two flanges, R S, one of which is secured to or cast with the shell of the box, while the other is movable thereon as a collar. Bolts U U, with suitable heads and nuts, unite these two flanges, thus securing the box in position in an aperture in any door or partition, V, as fully shown in Figs. 3 and 4. The end of the box containing the registering mechanism is provided with a cap, W, for the purpose of gaining access to the interior thereof.

As I propose to use this more especially as a time-check upon watchmen, who by it will not only register their visits at the place visited, but also at a central or district office, so that any long silence on the part of a watchman may be immediately inquired into, I will describe its operation for this purpose.

The instrument is placed in the door of a store or dwelling, in such a manner that the front or face is accessible only from the outside, and the dial only from the inside. At a prearranged time—say six p. m.—the cap covering the dial and time mechanism is removed by an authorized person. The movement is first wound up and started; then the dial is turned until the pencil or marking device is directly over the figure 6. The cap is then replaced, and the door of the building closed and secured for the night, leaving the outside of the instrument alone accessible to the watchman, who, upon his arrival—say at 6.15 p. m.—effects an entrance to the signal mechanism by means of a key, and at once proceeds to send a signal, notifying the central or district office of his arrival. This is done by moving the crank downward, which winds up the signal mechanism. Upon releasing the crank the circuit or break wheel at once revolves, and, before completing an entire revolution, causes the pencil or marking device to pass over the surface of the dial from a point one-fourth of the distance between the figures 6 and 7 toward the center of the dial, and is brought back to its original position by a suitable spring. The mark thus formed upon the dial indicates that the signal mechanism was actuated at 6.15 p. m. This is repeated upon each return of the watchman, and thus an accurate record is preserved of the watchman's visits for inspection on the following day.

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

1. The combination, with an electric signaling or alarm mechanism, of a recording mechanism for registering at the transmitting-station the time of transmittal of a signal therefrom, substantially as set forth.

2. The double-faced signal-box, provided with the signaling mechanism and the clock-work register, substantially as set forth.

3. The combination, with the circuit-breaking wheel and motor-train thereof, of a pencil or other marking-point of a registering mechanism and suitable connecting devices, substantially as set forth.

4. A double-faced signal-box, provided with the flanges R S and bolts U, substantially as and for the purposes set forth.

5. In the registering mechanism, the pencil-arm M, composed of the rigid parts *m m'*, united by a spring slip or piece, *n*, substantially as and for the purposes set forth.

6. The combination, with the arm M, provided with projection *e*, of the standard Q, provided with beveled upper edge or end, substantially as and for the purposes set forth.

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

WILLIAM J. PHILIPS.

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