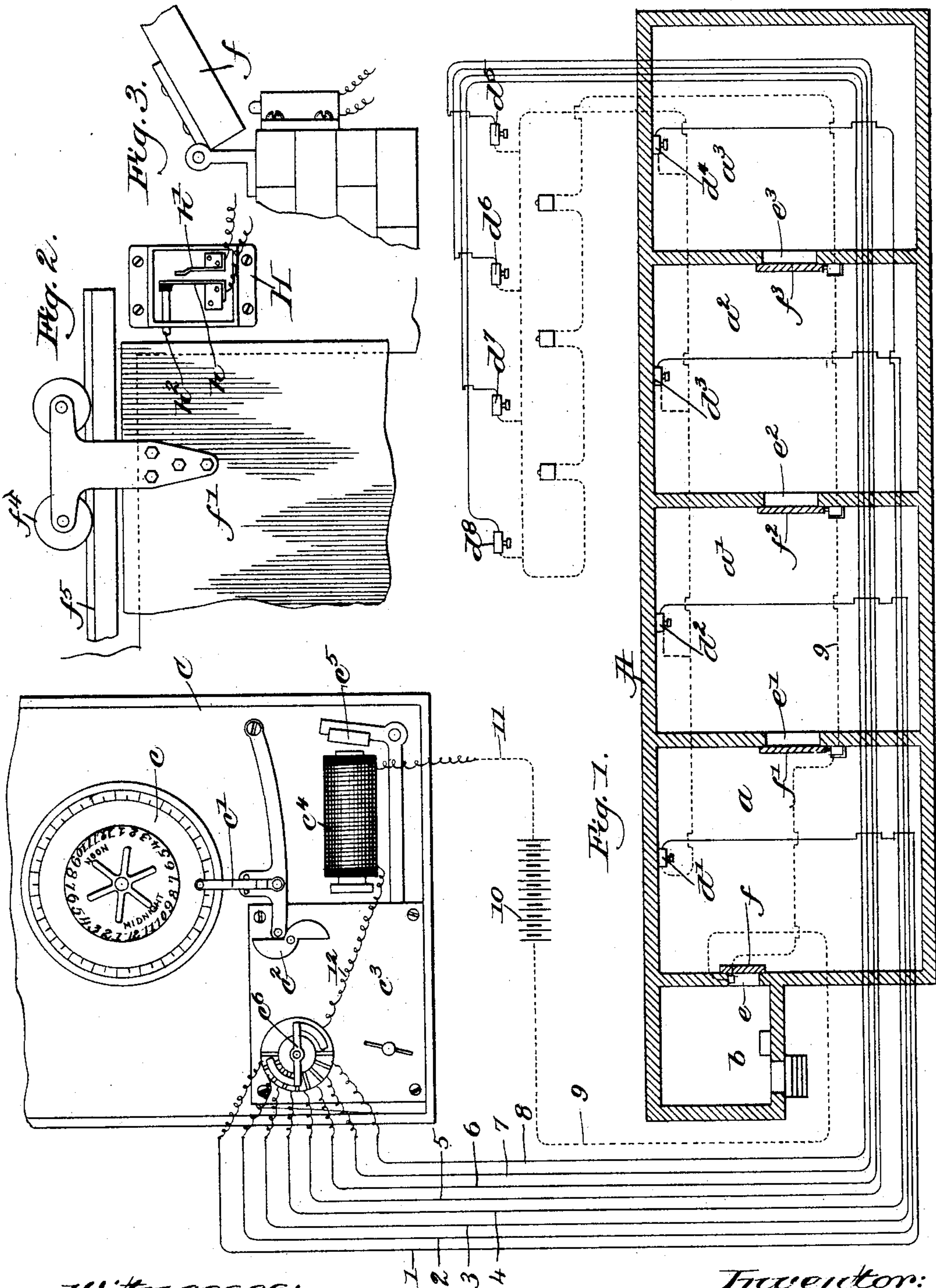


(No Model.)

C. H. PHINNEY.  
WATCHMAN'S ELECTRIC TIME RECORDER.

No. 589,510.

Patented Sept. 7, 1897.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## WATCHMAN'S ELECTRIC TIME-RECORDER.

SPECIFICATION forming part of Letters Patent No. 589,510, dated September 7, 1897.

Application filed December 9, 1895. Serial No. 571,479. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. PHINNEY, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Watchmen's Indicating Systems, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

This invention relates to electrical systems for indicating or indicating and recording the movements or positions of watchmen in a building, employed during the night to guard against fires, &c., such apparatus being commonly known as a "watchman's indicating or indicating and recording system."

Prior to my invention the usual practice in installing systems of this type is to arrange a suitable indicating or indicating and recording apparatus at some convenient point, as the office, and to electrically connect the same with a plurality of push-buttons or other circuit-changing devices distributed throughout the establishment at various points, the watchman being required to make the round of the circuit-changing devices at regular intervals and operate the same in succession to indicate or indicate and record at the office apparatus his positions at various times during the night.

In my experience in connection with the fire protection for large manufacturing establishments I have found that great danger lies in the possibility of the watchman passing from room to room or building to building of an establishment and leaving the doors open after him, for if a fire is started in a room or building soon after the watchman leaves it is possible for it to spread through the open doors or opening from room to room or building to building before the watchman is made aware of it and can sound the alarm or close the doors. The same danger, to a degree at least, arises from the possibility of windows or other openings being left open or unguarded. To obviate this danger, my present invention comprehends the introduction into the operating circuit or circuits of a system of circuit-controlling devices located at various points and controlled or operated by the opening and closing of the closures for the various doors, windows, or other openings

referred to, such circuit-closing devices being arranged in such manner as to prevent the watchman sending in his proper indicating or recording impulse or signal from any point if a single door or closure is left open or in its abnormal condition at any point in the system or in or along the circuit of the controller which he must, of necessity, operate. Such an arrangement requires the watchman to see to it that the doors or closures thus connected with the operating-circuit are in their desired or proper normal or closed positions, cutting off that room or building from the rest of the establishment, before he sends in his signal from said room or building.

My invention will be more clearly understood from the following specification, and the particular features which I claim as my invention will be hereinafter pointed out in the claims at the end of the specification.

In the drawings representing one embodiment of my invention, Figure 1 is a diagrammatical view illustrating my improved system as applied to ordinary factory purposes, and Figs. 2 and 3 details illustrating suitable means for actuating the circuit-controllers from or by the moving closures.

In the embodiment of my invention selected for illustration and shown in the drawings, referring particularly to Fig. 1, A represents in horizontal section or plan view a single floor of a factory or other building containing four distinct rooms or departments  $a$   $a'$   $a''$   $a'''$ , with the office  $b$  arranged at some convenient point, shown, for instance, at the end of the building.

The indicating or recording apparatus C, designed to be located in the office, is, for the sake of clearness, partially shown on an enlarged scale at the upper left-hand portion of Sheet 1 of the drawings. This indicating or recording apparatus C may be of any suitable or desired construction so long as it is electrically operated from one or more stations or points distributed through the establishment.

The apparatus herein illustrated is the well-known Howard apparatus, containing a recording-dial  $c$ , rotated slowly by clockwork, coöperating with which is the marker  $c'$ , controlled by a let-off  $c''$ , actuated by a suitable time mechanism within the frame  $c'''$ , the op-



erations of which are controlled by the magnet  $c^4$  and its armature  $c^5$ , successive operations of the mechanism  $c^3$  acting to carry the rotary switch-arm  $c^6$  into successive positions connecting the magnet  $c^4$  with the various outgoing circuits 1, 2, 3, 4, 5, 6, 7, and 8, leading, respectively, to the operating-stations or circuit-controlling devices  $d^1, d^2, d^3, d^4, d^5, d^6, d^7$ , and  $d^8$ , located at different points in the building, the devices  $d^1, d^2, d^3$ , and  $d^4$  being arranged, respectively, in the rooms  $a, a', a^2$ , and  $a^3$ , the remaining devices being supposed to be arranged in corresponding or, it may be, different rooms on the next floor of the same or in different parts of the same or other buildings.

The openings to be guarded are indicated at  $e, e', e^2$ , and  $e^3$ , and it is supposed that other and, it may be, similar openings are arranged for and adjacent the circuit-controlling devices  $d^5, d^6, d^7$ , and  $d^8$ , said openings  $e$  to  $e^3$ , inclusive, being shown as doorways fitted with suitable swinging or, it may be, sliding doors  $f, f', f^2$ , and  $f^3$ .

Referring to Fig. 2, I have shown in detail a part of one door, as  $f'$ , hung from suitable hangers  $f^4$ , adapted to travel on suitable runs  $f^5$ .

At one side of the doorway is arranged a circuit-controller II, of any suitable or desired construction, capable of being operated by the door when moved into its position, closing the doorway, said controller in the present instance comprising the two spring contacts  $h$  and  $h'$ , one of which, as  $h$ , is provided with an operating projection  $h^2$ , adapted to be struck by the door as the latter approaches the end of its movement and pushed over into contact with the spring  $h'$  to close the circuit thereat.

All the circuit-controllers  $d$  to  $d^8$ , inclusive, are shown as connected by a common return-wire 9 with one pole of the battery 10, the opposite pole of which is connected by wire 11 with the magnet  $c^4$  of the indicating or recording apparatus, said magnet being in turn connected by wire 12 with the arms of the switch  $c^6$ . This return-wire 9 in the present instance passes through and includes all of the circuit-controllers II, said return-wire being broken at each of said controllers when the doors of their adjacent doorways are open or in their abnormal positions and closed by said doors when the latter are in their normal or closed position.

The door  $f$  being a swing-door is provided with a circuit-closer, arranged as shown in Fig. 3, it operating, however, precisely on the principle illustrated by Fig. 2.

In the embodiment of my invention herein illustrated I have shown an open-circuit system, the watchman as he passes from room to room proceeding to and manually operating the circuit-controllers  $d^1, d^2$ , &c., in said room to close the circuit and record the impulse upon the dial  $c$  in the office.

From the previous description it will be

evident that if any single door  $f$  to  $f^3$  is ajar the return-wire of the system will be broken thereat and it will be impossible for the watchman to send his recording signal or impulse from any point in the establishment. It is thus obligatory upon the watchman when he enters the room to see that the door behind him is closed and when he leaves a room to see that he leaves all doors closed, so that it is impossible for a watchman to record his movements, as required, at the office and at the same time leave any door open to permit fire to spread from room to room in the building before discovered.

It will be evident that my invention is equally applicable to windows or any other closures for openings which if left open would present an element of danger, and, in fact, my system may be applied to and used in connection with any device located at any part of the building which it is desired the watchman shall place in a certain condition before proceeding upon his rounds through the building.

In the claims I have designated the switches  $d'$ , &c., which are operated by the watchman to send his signal, as "manually-operated circuit-controlling devices" to distinguish them from the other circuit-controlling devices which are operated or controlled by the movable closures.

While I have herein shown and described my invention as embodied in an open-circuit system, it should be distinctly understood that my invention is equally applicable to a closed-circuit system, and the circuit-controllers may be of any desired construction so long as they are capable when operated of effecting such a change in the condition of the electric operating-circuit as shall produce the results enumerated in the foregoing description.

Instead of employing push-buttons as circuit-controlling devices I may employ any other usual or well-known equivalent devices capable of making the circuit effective to actuate the indicating apparatus—as, for instance, instead of the push-buttons, I might employ small magneto-generators in each room as in the so-called "eco-magneto" system, the turning of which would produce a current of electricity sufficient to actuate the indicating apparatus, the use of magneto-generators doing away with the necessity of employing a battery.

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

1. In a watchman's detector system, an electrically-actuated indicating apparatus, a plurality of circuit-controlling devices electrically connected therewith in series, and adapted to be moved when a like number of independent objects are placed in predetermined position, combined with a series of manually-operable circuit-changing devices each arranged in multiple in electrical circuit with said series circuit and also arranged to operate



said indicating apparatus, the operation of each of which is dependent upon a predetermined position of all of said circuit-controlling devices, substantially as described.

5 2. In a watchman's detector system, an electrically-actuated indicating apparatus, a plurality of circuit-controlling devices electrically connected therewith and adapted to be moved when a like number of independent  
10 objects are placed in predetermined position, combined with a series of manually-operable circuit-changing devices, arranged in electrical circuit with and to operate said indicating apparatus, the operation of each of  
15 which is dependent upon a predetermined position of all of said circuit-controlling devices, substantially as described.

3. The herein-described protective system for factories, &c., comprising in connection  
20 with a watchman's indicating system, having a plurality of signaling devices located respectively at various remote points desired,

a plurality of controlling devices for certain movable articles whose positions it is desired shall be ascertained and controlled, said controlling devices being operated by movement  
25 of all of said articles into predetermined positions to render said signaling devices operative, the latter being inoperative otherwise, said predetermined positions remaining the  
30 same, so long as the protective system is in operative condition whereby the watchman is obliged to carefully attend to the said positioning of all of said articles before he can  
35 send his required signals over the indicating system from the said various points thereof, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. PHINNEY.

Witnesses:

GEO. W. GREGORY,  
MARGARET A. DUNN.