L. AIRHART.

COMBINED CENTRAL ENERGY TELEPHONE AND WATCHMAN'S CLOCK SYSTEM.

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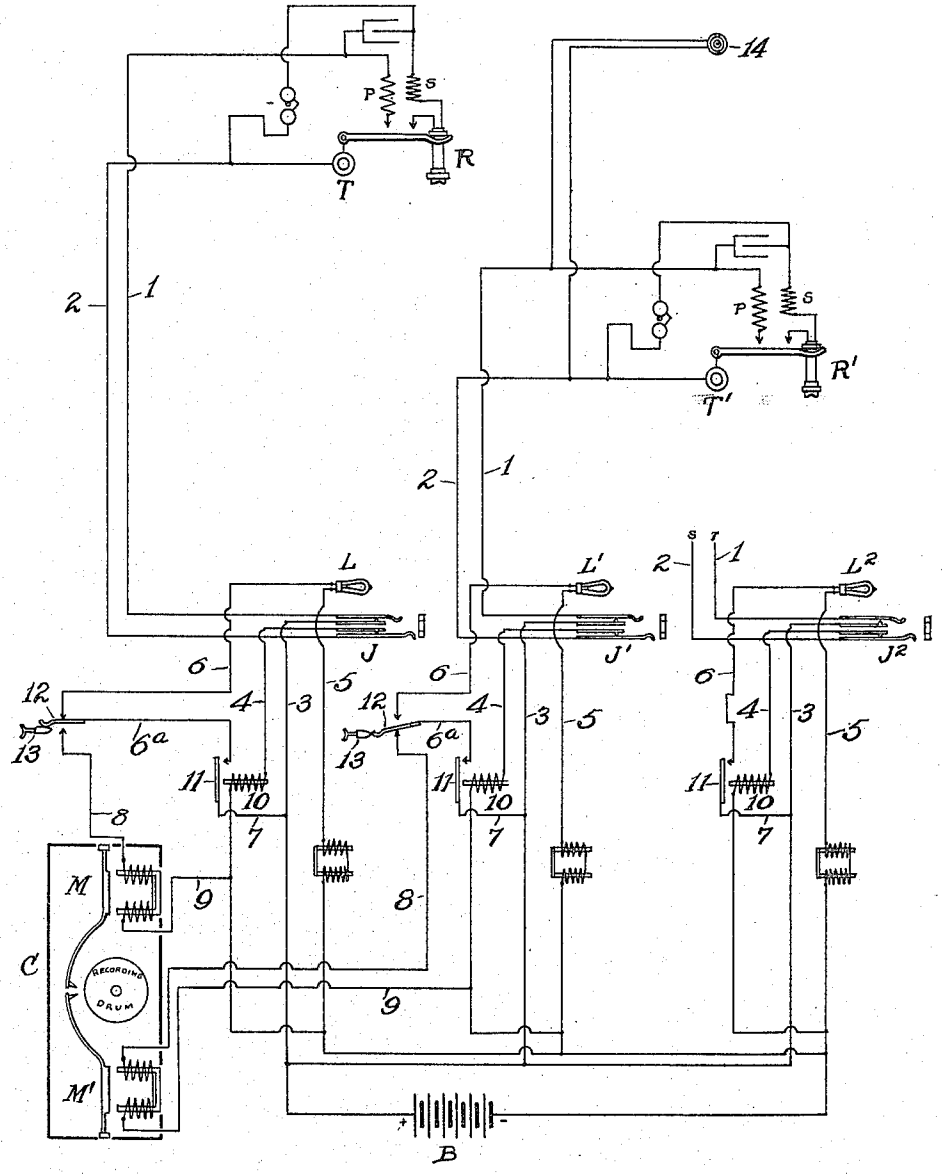

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UNITED STATES PATENT OFFICE.

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COMBINED CENTRAL-ENERGY TELEPHONE AND WATCHMAN'S-CLOCK SYSTEM.

1,167,325. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed December 4, 1913. Serial No. 804,624.

To all whom it may concern:

Be it known that I, LEWIS AIRHART, a citizen of the United States, residing at West Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Combined Central-Energy Telephone and Watchmen's-Clock Systems, of which the following is a specification.

My invention relates to a central energy telephone system, and my object is to provide for further utilizing such system, when desired, as a watchman's clock system, the mere raising of a receiver at a determined station recording that station and time on the dial of a watchman's clock.

Usually when a telephone and a watchman's clock system were both desired, two independent wiring circuits were required involving the maintaining of the insulation in two separate circuits each having its own distinct source of electrical energy. My invention avoids this duplication and utilizes the telephone circuit alone, in which, as a rule, the insulation is of a higher standard; and inasmuch as the use of the telephone during the day time will reveal any troubles developed at the different stations, insures greater accuracy in the recording from the several stations when the watchman's clock system is thrown into service during the night. Provision is made for an extension of the circuit when the desired location of a watchman's station does not coincide with a telephone station. And provision is also made at a convenient central point for setting the system to operate either as a central telephone system or as a watchman's clock recording system.

My invention is fully described in connection with the accompanying drawing, illustrating diagrammatically a preferred embodiment thereof, and the novel features are particularly set forth in the subjoined claims.

In a central energy telephone system a central exchange is employed, to which the line wires from the different stations are brought, and through which the connections from one station to any other are made. These line wires are connected through jacks in well known manner, and each line has a signal, as a lamp, to notify the central operator when a station is calling.

In the drawing I have indicated the line wires for three stations, two of which are shown connected to their stations, and each line has its own jack and signal lamp.

Each station with its receiver R or R^1, and transmitter T or T^1, is connected in well known manner, through its line wires 1 and 2, to its line jack J, J^1, or J^2. Each line jack is also connected, through its wires 3 and 4, the latter including a relay 10, to the battery B. Each relay circuit includes its signal lamp L, L^1, or L^2, its wire 5 to one end of battery B, and its wires 6 and 7 to the other end of battery B, all as commonly employed in this type of telephone system. The raising of a receiver R, or R^1, from its hook causes the indirect lighting of its corresponding signal lamp L, or L^1; the raised hook closing a direct circuit to battery B through its primary P, its line wires 1 and 2, its jack wire 3 and 4, and its relay 10, the latter drawing up its switch 11 to close a separate circuit to battery B including its lamp L, L^1, or L^2, through its relay wires 5, 6, and 7.

In factories employing this well known type of telephone system above described, the locations of the different stations coincide to a large extent with the points desired to be covered by the watchman in his nightly rounds; and my invention consists in adapting this system to operate a recording watchman's clock of any well known make. To accomplish this I provide switches 12 in the relay wires 6, of the stations chosen to also operate the watchman's clock system, arranged to break the wires of its station and to connect instead, through wires 6^a, 8 and 9, its station magnets, M or M^1, of a watchman's recording clock C. Plugs 13 are arranged to operate the respective switches to connect either the lamp L, L^1, or the recording magnets M, M^1, and the latter are wound to equal resistance with the lamps L, L^1.

When a plug has been operated to cause its switch to disconnect its lamp and connect its recording magnet, the raising of the telephone receiver in that circuit will cause the relay current to pass to its clock recording magnet and back to the service, thus re-

cording in the usual manner the station and time such receiver was raised. In the drawings the unit J is shown in normal position for operation as a telephone, while unit J^1 is arranged to actuate the clock recording mechanism. In the latter its plug 13 has been operated to swing its switch 12 to disconnect the lamp L^1 relay and connect instead the clock magnet M^1 relay. The raising of the receiver R^1 will then cause the relay current in this circuit to pass through its wire 6^a, switch 12, wire 8, to its magnet M^1, and back through its wire 9, to the battery.

When the telephone station is not located at the point desired to be covered by the watchman, a switch or button 14, in multiple extension from the line wires 1 and 2 of the nearest station, is provided, the mere pressing of which will record on the clock dial in the same manner as the raising of the receiver, at that station. It will be understood that in the switch boards commonly employed in this system, the jacks and their signal lamps are conveniently assembled for ready manipulation by the operator, and I also assemble the switches 12, with their plugs 13, so that the operator, when leaving for the night, may quickly operate them to disconnect the lamps and connect instead the watchman's clock device. Upon resumption of the telephone service in the morning, these switches are again operated to connect the lamps and disconnect the clock device. The latter may be located at any convenient point and need not necessarily be made a part of the switch board. Not all the telephone stations need be used, only such as are located at points in the watchman's rounds desired to be covered. I have indicated the line wires leading to three telephone stations, only two of which are connected to the watchman's clock device, the relay for lamp L^2 not being provided with a switch to throw in the latter.

It will thus be seen that my invention provides in a very simple manner for utilizing the ordinary telephone system for operating a watchman's clock when desired, thus saving dual wiring, and the daily use of the telephone will develop any breaks or interruptions in the circuit, which may be repaired by day, so as to insure the accurate recording by night of the rounds of the watchman to the points desired to be covered by him.

What I claim is:

1. A combined central energy telephone and watchman's clock system having a common circuit and source of current, circuit-closing means at stations on said circuit, separate signal relays for said stations at a central station each provided with a signal-cut-out switch, and a watchman's clock device adapted to be thrown into operative connection with any one of said relays by signal-cut-out movement of the corresponding switch.

2. A combined central energy telephone and watchman's clock system having a common circuit and source of current, separate telephone-operated signal relays for the stations on said circuit each provided with a signal-cut-out switch, and a watchman's clock device adapted to be thrown into operative connection with any one of said telephone-operated relays by signal-cut-out movement of the corresponding switch.

3. A combined central energy telephone and watchman's clock system having a common circuit and source of current, separate telephone-operated signal relays for the stations on said circuit each provided with a signal-cut-out switch, and a watchman's clock device comprising an electro-magnet wound to equal resistance with the signal device and adapted to be thrown into operative connection with any one of said telephone-operated relays by signal-cut-out movement of the corresponding switch.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS AIRHART.

Witnesses:
W. L. DAVIS,
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