P. J. DELL, JR.

TIME CONTROLLED ALARM SYSTEM FOR TELEPHONE EXCHANGES.

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1,050,765. Patented Jan. 14, 1913.

FIG. 1.

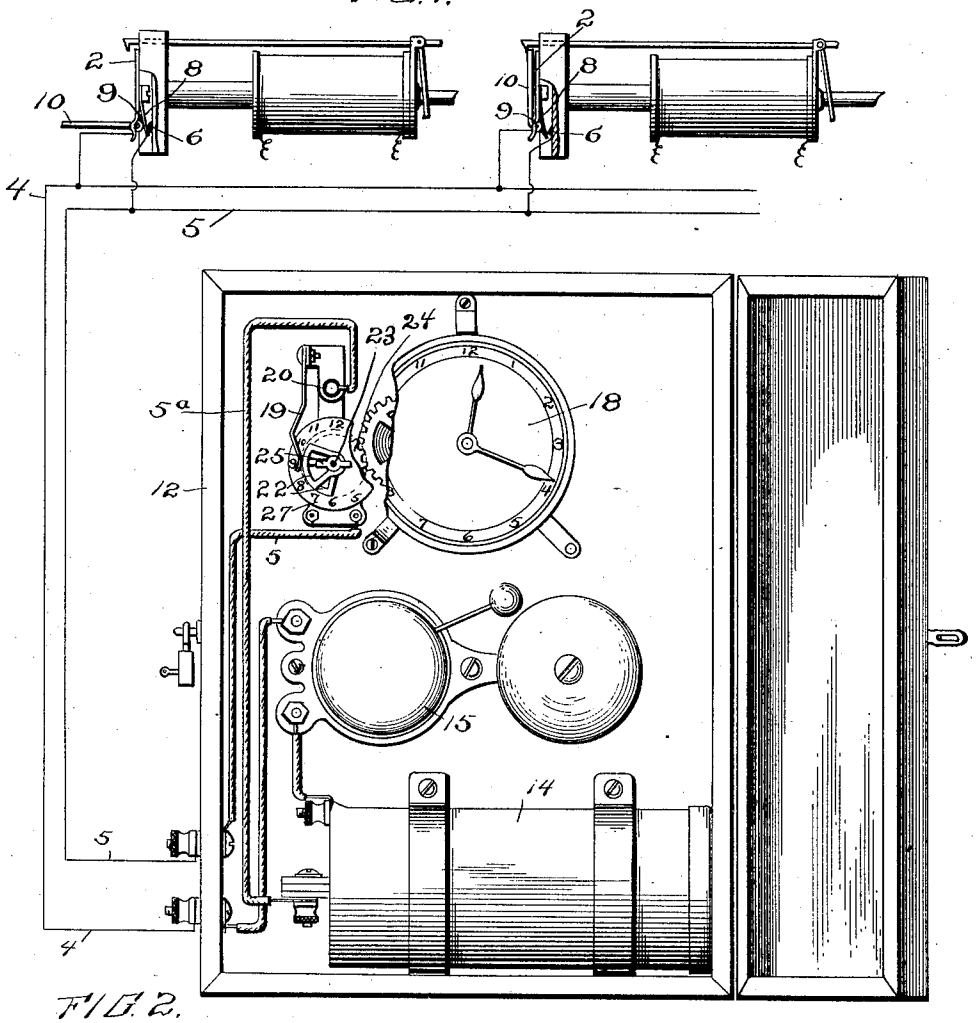
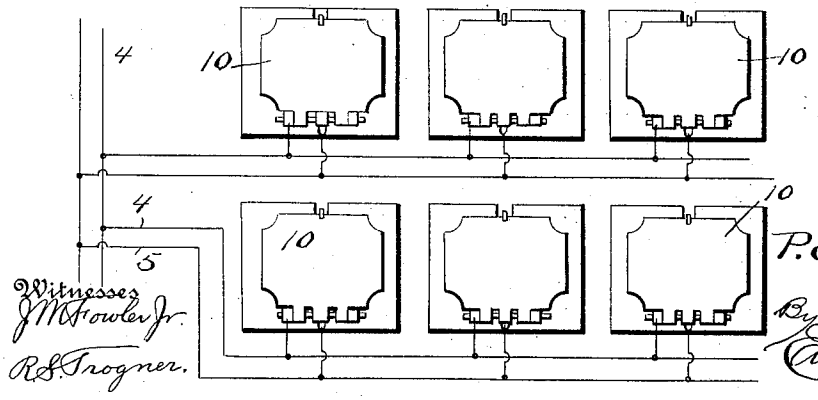


FIG. 2.



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TIME-CONTROLLED ALARM SYSTEM FOR TELEPHONE-EXCHANGES.

1,050,765. Specification of Letters Patent. **Patented Jan. 14, 1913.**

Application filed September 3, 1912. Serial No. 718,262.

To all whom it may concern:

Be it known that I, PHILLIP J. DELL, Jr., a citizen of the United States, residing at Rochelle, in the county of Wilcox and State of Georgia, have invented certain new and useful Improvements in Time-Controlled Alarm Systems for Telephone-Exchanges, of which the following is a specification.

This invention relates to automatic time-controlled alarm signals for telephone exchanges and is more particularly adapted to small exchange stations where a single night operator is in charge.

It frequently happens in small exchanges where the calls are infrequent, that the night operator falls asleep and is not awakened by the ordinary call signal.

The object of my present invention is to provide an automatic alarm which will be actuated whenever any of the drops on the switchboard fall in response to a subscriber's call, and which will continue to sound until the drop is restored.

It is also my purpose to place the alarm circuit under time-controlled mechanism which is inaccessible to the operator so that it will be effective during certain predetermined periods.

In the accompanying drawings Figure 1, is a diagrammatic view of an alarm system embodying my invention; and Fig. 2, is an elevation of a portion of a switchboard showing the manner of connecting the drops in multiple to the alarm circuit.

All of the drops of the switchboard are connected in multiple to the alarm circuit and the alarm magnet will therefore be energized whenever any drop falls. Any convenient manner of arranging the connection with the drops may be employed, but I prefer to connect each back plate 2, to one side 4 of the alarm circuit while the other circuit conductor 5, is connected to contacts 6, in the rear of the back plate. A spring arm 8, carried by the plate 2, is forced into engagement with the contact 6, by a cam or lug 9, on the drop 10, when the latter falls, thereby closing the alarm circuit.

The time-controlled mechanism and the alarm are contained in a casing 12 which may be locked and remain under control of the manager or superintendent so that the operator or other person cannot have access thereto. The battery 14, electromagnetic alarm 15 and clock 18, may be of well-known construction.

The time-controlled switch mechanism comprises a spring-contact arm 19, which is insulated from the frame, as indicated at 20, and is connected to the conductor 5^a leading from one pole of the battery; and a pair of contact-sectors 22, secured to an arbor 23, which carries a pinion 24, in mesh with the clock-train in a manner to be rotated once in 24 hours. The sectors 22 are connected with the frame to which the conductor 5 is connected and may be adjusted relatively to each other on the arbor to vary the length of the arc of contact to correspond with any desired period of time and after adjustment they are locked by means of a wing-nut 25, which may also be used to rotate the arbor and sectors to their desired position with relation to the clock train. In order that the sector arms may be adjusted accurately in the proper position to cause initial engagement with the spring arm 19 at the desired instant, a dial 27 may be placed on the frame adjacent the switch.

The operation of my automatic time-controlled alarm system will be understood from the foregoing description. The sectors 22 having been adjusted to cover the desired arc of contact corresponding with the period of time the alarm circuit is to be effective, they are turned to the proper position on the dial and the casing 12 is then locked by the manager or superintendent. At the predetermined hour for which the switch was adjusted, the sector 22 will be brought by the clock train into engagement with the spring contact arm 19 and will maintain contact therewith until the sector has been rotated through the arc corresponding with the length of the dial 27 covered by the sectors. During this period, whenever any drop 10 falls, the cam or lug 9, thereon forces the spring 8 into engagement with the contact 6, thereby closing the alarm circuit and causing the alarm 15 to ring until the said drop is restored.

The importance of this invention will be appreciated by managers of telephone exchanges and by those who have had experience in sending night calls into exchanges where there is only one night operator. Where the exchange is small and the calls are infrequent, the operator frequently falls

asleep and fails to respond to the call. My invention overcomes this difficulty by causing an alarm to be sounded automatically whenever a call is received upon the switchboard of the exchange. Furthermore, the alarm device and the switch mechanism cannot be interfered with by the operator and these are automatically brought into an operative condition at the predetermined time each day.

While I have described in detail the particular construction illustrated in the accompanying drawings for the purpose of disclosing an embodiment of my invention, I am aware that various changes may be made therein without departing from the spirit of my invention.

I claim:—

1. A time-controlled alarm system for telephone exchanges, comprising a plurality of switchboard call-drops, an alarm circuit connected to an electric generator and to an electro-magnetic alarm device and having pairs of leads extending adjacent to said drops, conductors permanently connecting one of said leads with each of said drops, conductors connecting the other of said leads to contacts adjacent said drops, means actuated by said drops for connecting said contacts to their respective drops, and a clock-controlled switch for opening and closing said alarm circuit.

2. The combination with the call-drops in a telephone switchboard, of a time-controlled alarm system comprising an alarm circuit having an electrically actuated alarm device, a source of electric power, a time-controlled switch for connecting and disconnecting said circuit to said source of electric power, and means operated by said drops for closing said circuit to actuate said alarm, whereby an alarm will be given whenever any drop on the switchboard is operated during the period controlled by said switch.

3. The combination with the call drops in a telephone switchboard, of a time-controlled alarm system comprising an alarm circuit having an electrically actuated alarm device, a source of electric power, a time-controlled switch for connecting and disconnecting said circuit to said source of electric power, said switch having a variable arc of contact to vary the period during which the circuit is connected to said source, and means operated by said drops for closing said circuit to actuate said alarm, whereby an alarm will be given whenever any drop on the switchboard is operated during the period controlled by said switch.

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

PHILLIP JONES DELL, Jr.

Witnesses:

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Nannie Surrency.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."