

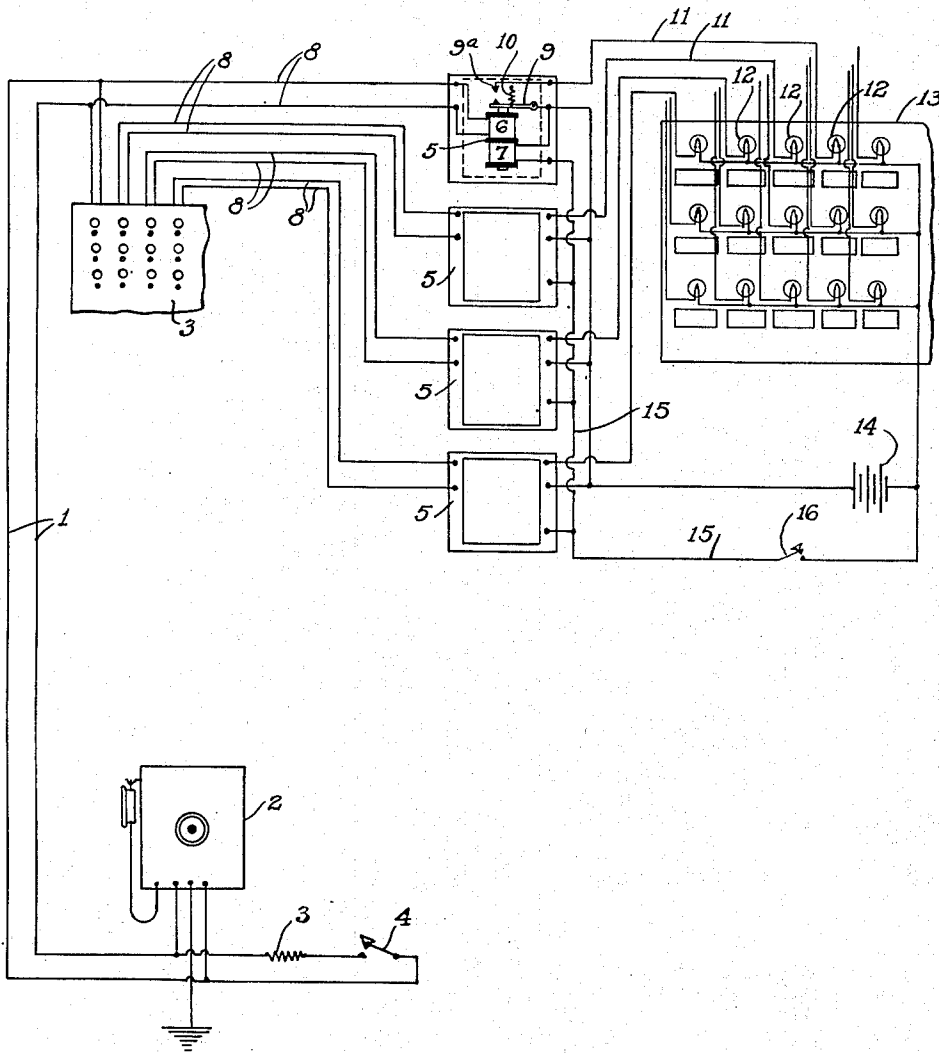
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J. I. SWADENER

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TELEPHONE ALARM SYSTEM

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BY *John I. Swadener* INVENTOR,
Yonah S. Smith ATTORNEY

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TELEPHONE ALARM SYSTEM

John I. Swadener, Greenville, Ohio

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3 Claims. (Cl. 179-5)

This invention relates to new and useful improvements in telephone alarm systems.

In residence, office and factory buildings equipped with telephones connected to a central station, it is highly desirable that the electric circuits including these instruments be adapted for use to operate at central, signals indicating unauthorized entries, fires and other emergencies in those structures.

It is the principal object of my invention, therefore, to provide for association with a telephone circuit, means for using that circuit in an emergency, to automatically actuate at the central station, a visible or audible signal having a designation corresponding to the location of the telephone in the building or room being broken into by an unauthorized person, or in which a fire or other emergency has occurred.

My alarm system, which is simple and efficient, may be adapted to any existing telephone system for protecting houses or other buildings particularly against the entry of burglars. By means of a switch placed in a convenient, and preferably concealed, location, the telephone instrument may be automatically shorted out of the circuit while the latter is used to operate at the central station, a signal bearing the designation corresponding to the location of the telephone. After the signal is given, a relay may be easily reset to restore the signal circuit to its normal operating condition.

Other important and incidental objects will be brought out in the following specification and particularly set forth in the subjoined claims.

In the accompanying drawing, the figure is a schematic diagram of my telephone alarm system.

Referring to the drawing, the numeral 1 designates the pair of a subscriber's telephone circuit which leads from a telephone 2 to a central switchboard 3. Shunted across the line 1 is a fixed resistance 3 and a push button switch 4 by which a fixed resistance may be placed across the line, decreasing the normal resistance of the telephone and resulting in a drop in the line voltage.

At central there is provided for each subscriber's telephone, if desired, a relay 5 having dual windings 6 and 7, the winding 6 being shunted across the telephone line 1 by lines 8. When the normal full voltage flows through the telephone, the voltage impressed on the winding 6 of the relay 5, will hold the relay armature 9 away from a contact 9^a, in opposition to the ten-

sion of a coil spring 10, and in engagement with the pole piece.

If the switch 4 is momentarily closed by one who is aware of the entrance of an unauthorized person into the building, the drop in voltage in the line and through the winding 6 by reason of the consequent insertion of the resistance 3 in the telephone circuit, will release the relay armature 9 which will then be drawn by the spring 10 into engagement with the contact 9^a. The latter is in a secondary circuit 11 that also includes a signal lamp 12 on an auxiliary board 13, and a battery 14. When the contact 9 is engaged by the relay armature, it will close the secondary circuit including the signal lamp 12 identifying the particular subscriber's telephone from which the signal is received, to illuminate that lamp. The exchange operator in charge of the auxiliary signal board 13, being apprised, by the illumination of a signal lamp designating a particular subscriber's telephone, that some emergency exists at the location of it, will immediately inform the proper authorities.

While any number of relays and associated signal lamps may be provided at central, I have illustrated in the drawing, four relays 5 shunted across respective subscriber's telephone lines at the central switchboard 3, by lines 8. The armature of each relay will be held away from its respective contact 9^a as long as the normal full voltage flows through its respective telephone circuit, but will close the secondary circuit, as before described, to illuminate an identifying lamp in that circuit when the switch 4 is actuated to cause a voltage drop in the telephone line.

For the purpose of resetting a relay 5 after a signal lamp has been illuminated, I have provided the following means that are common to all the relays. The winding 7 of each relay is connected through a common lead 15 and a switch 16 with the battery 14. When the switch 16 is closed by the operator, the winding 7 of the relay 5 belonging to a telephone line over which an alarm has been sent, will retract the armature 9 into engagement with the pole piece, in which position it will be held by the normal telephone line voltage now impressed on the winding 6. Thus it is possible by the above, or other suitable means, for the operator to easily reset a relay 4 to break the secondary signal circuit and restore the armature to its normal position for operation by the spring 10 to again close the secondary circuit to illuminate the identifying lamp included therein when a drop in the telephone line voltage is effected by the operation

of the switch 4. This switch may be placed on or in a desk, under a counter or in any other convenient location for quick, silent and concealed operation by one who is apprised of the entrance of an unauthorized person.

It is thus seen that my signaling means may be applied to any existing telephone system for use in protecting subscriber's homes, offices, plants and other buildings against the entrance of unauthorized persons as well as for use in fires and other emergencies. For example, my alarm circuit may be connected to the subscriber's line between the substation and the central station in the circuit illustrated and described on pages 306-309, of "Telephone and Telegraph Engineer's Handbook", 1st Edition, 48th Thousand, 11th Impression, by International Correspondence Schools, Scranton, Pennsylvania, and published by International Textbook Company of Scranton, Pennsylvania.

I do not wish to be limited to the details of construction and arrangement herein shown and described, and any changes or modifications may be made therein within the scope of the subjoined claims.

Having described my invention, I claim:

1. An apparatus of the type described, comprising a telephone line, a telephone in said line, a circuit including a switch and a resistance shunted across the telephone end of said line, a central switch board to which the other end of said telephone line is connected, a second circuit shunted across the switch board end of said telephone line, a relay in the second circuit, and a signal circuit also including said relay, the armature of said relay adapted to be held against the pole piece by the normal voltage in the telephone line, a contact in the signal circuit opposite the free end of said armature, and a spring adapted to draw said armature away from the pole piece and against the contact to close the signal circuit when the switch is actuated to effect, through the resistance, a drop in the voltage impressed upon said relay.

2. An apparatus of the type described, comprising a telephone line, a telephone in said line,

a circuit including a switch and a resistance shunted across the telephone end of said line, a central switchboard to which the other end of said telephone line is connected, a second circuit shunted across the switchboard end of said telephone line, a relay having a dual winding, the outer winding being included in the second circuit, a signal circuit also including the outer winding, the armature of said relay adapted to be held against the pole piece by the normal telephone line voltage impressed upon the outer winding, a contact in the signal circuit opposite the free end of said armature, a spring adapted to draw said armature away from the pole piece and against the contact to close the signal circuit when the switch is actuated to effect, through the resistance, a drop in the voltage impressed upon the outer winding of said relay, and means for impressing voltage on the inner winding to draw the armature away from the contact to break the signal circuit, and into engagement with the pole piece, to reset the relay.

3. An apparatus of the type described, comprising a telephone line, a telephone in said line, a circuit including a switch and a resistance shunted across the telephone end of said line, a central switchboard to which the other end of said telephone line is connected, a second circuit shunted across the switchboard end of said telephone line, a relay having a dual winding, the outer winding being included in the second circuit, a signal circuit also including the outer winding, the armature of said relay adapted to be held against the pole piece by the normal telephone line voltage impressed upon the outer winding, a contact in the signal circuit opposite the free end of said armature, a spring adapted to draw said armature away from the pole piece and against the contact to close the signal circuit when the switch is actuated to effect, through the resistance, a drop in the voltage impressed upon the outer winding of said relay, and a circuit including a switch, a battery and the inner winding of the relay for resetting the latter.

JOHN I. SWADENER.