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AUTOMATIC FIRE ALARM SYSTEM

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FIG. 1

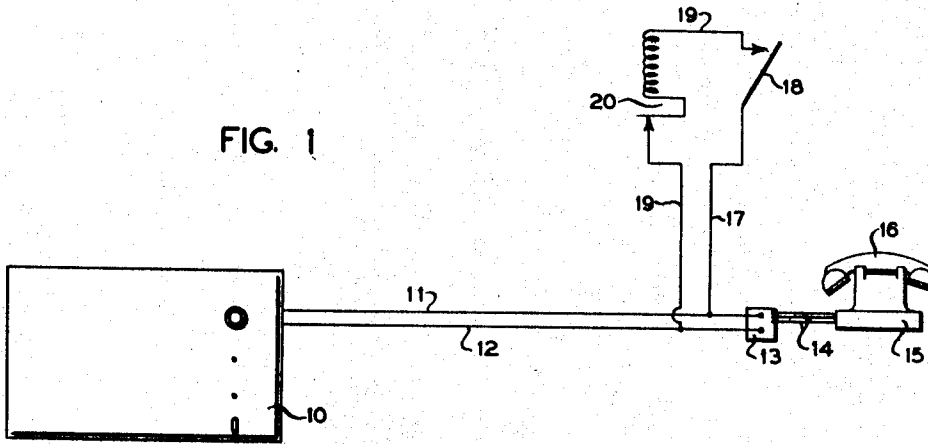


FIG. 2

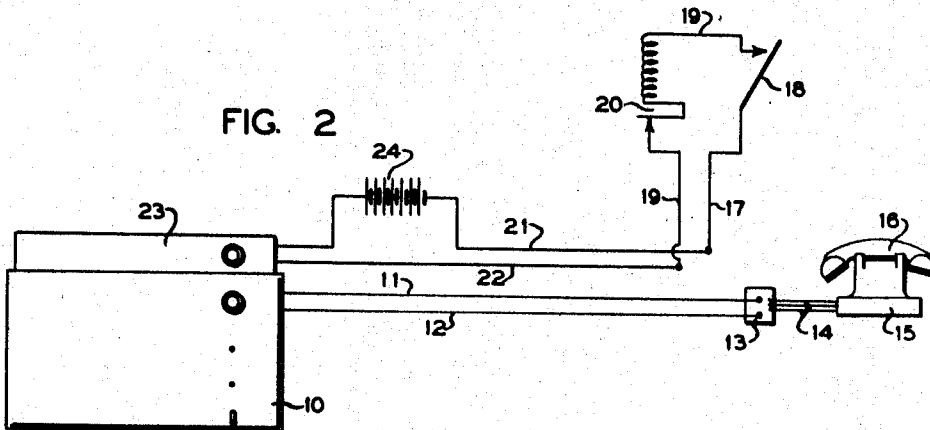
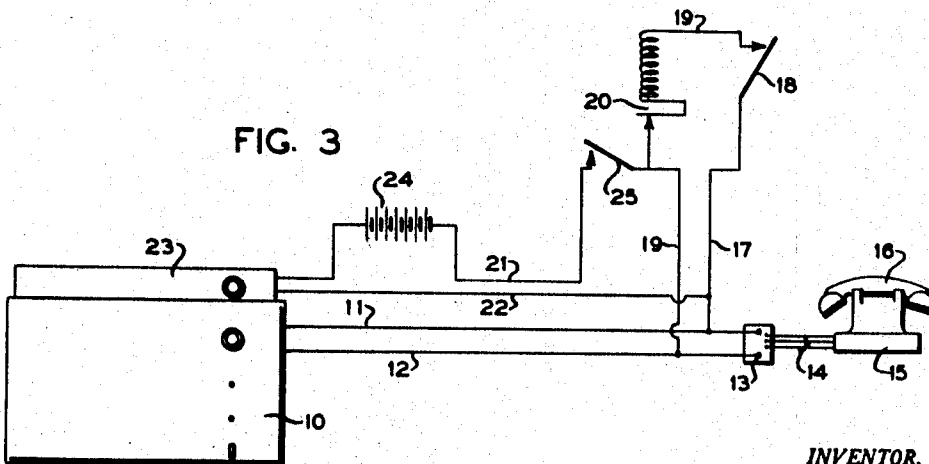


FIG. 3



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AUTOMATIC FIRE ALARM SYSTEM

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1 Claim. (Cl. 179-5)

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This invention relates to signal systems, and more particularly to a signal system employed to indicate or call attention to an abnormal condition, particularly a fire.

Numerous types of automatic fire alarm systems have been proposed; however, these have not proven adequate to properly warn, and consequently disastrous fires have taken a large toll of human life and property.

It is an object of the invention to provide an automatic fire alarm system of simple, inexpensive, construction involving a small amount of material which can be easily installed, and which will adequately warn of the existence of a temperature above a predetermined amount.

Briefly stated, the invention comprises a circuit utilizing the telephone wires from a switchboard, which circuit is normally open, but is closed by means of a thermostat set to operate at a desired temperature as, for example, at 135° F., and within the auxiliary circuit is a blinker element or other device of a character which will produce intermittent interruption of the electrical energy to cause the flickering of a light or other signal on a switchboard.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawings, wherein:

Fig. 1 is a diagrammatic view illustrating one application of the invention;

Fig. 2, a similar view of a modified form; and

Fig. 3, a similar view employing a combination of the disclosures of Figs. 1 and 2.

With continued reference to the drawings, the invention may be applied to or used in conjunction with a conventional telephone system, including a switchboard or central station 10, generally referred to by the telephone company as a P. B. X system of forty-eight volts or less, lead wires or conductors 11 and 12 which terminate in a switchbox 13, from which telephone wires 14 are connected to an instrument consisting of a base 15 and a combination transmitter receiver 16.

By picking up the receiver transmitter 16, a signal is actuated on the switchboard for attracting the switchboard operator's attention. Any number of lines of this character from the switchboard may be employed, depending upon requirements, and in hotels and other buildings having numerous rooms, each room of which is ordinarily supplied with an individual telephone.

A depressible element carried by the telephone beneath the receiver is held down by the receiver when the receiver is in position on its base and

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is permitted to move upwardly when the receiver is removed from its base, and this weight of the receiver is utilized to make and break an electrical circuit to the switchboard.

In order to provide automatic means for operating the same signal on a switchboard which ordinarily is a light, a mechanical drop or the like, auxiliary means is provided for completing a circuit to the switchboard through the conductors 11 and 12.

One way of accomplishing this completion of the circuit is by means of a circuit loop consisting of a conductor 17, connected at one end to the conductor 11, and having its other end connected to an adjustable thermostat 18 constructed to move at a fixed temperature as, for example, 135° F., or to move upon a rapid rise in temperature, and engage a conductor 19 which includes a blinker element 20. The thermostat 18 is adapted to be located in any convenient position in the room to be guarded by the automatic alarm system, so that it will be influenced by heat in any part of the room. Thus, if a fire occurs, the thermostat upon reaching a temperature of 135° F., or other setting, closes a circuit through the blinker element to the switchboard actuating a signal or an alarm at the switchboard or central station, and due to the blinker element in the circuit the electrical impulses will be interrupted in a manner to cause intermittent operation of the signal, such as flickering of a light.

When installing fire alarm loops, two are preferably provided in each room to insure absolute operation should one become ineffective due to damage or the like.

It will, therefore, be readily understood that the automatic alarm system includes a central station and auxiliary stations, with a signal at the central station energized by completion of a circuit by a thermostat at the auxiliary station for operation of a signal at the central station. By this system each auxiliary station, which may be a room of a hotel, receives individual protection independent of every other station.

If desired, other conductors 21 and 22 may be substituted for the conductors 11 and 12 of the telephone system, and other central signal mechanism 23 may be used in addition to or in lieu of the switchboard 10.

One important feature of the invention is that there is nothing to interfere with the telephone system when the invention is used, as there is only an open circuit connected to the conductors 11 and 12 until such time as the thermostat is energized to close the circuit.

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In Fig. 2 the fire alarm system, instead of being connected to the conductors 11 and 12, extend directly to the central station and may be connected to a signal mechanism 23 apart from the switchboard 10 and include a battery or other source of electrical energy 24 or may be connected directly to the switchboard 10 eliminating the necessity for the battery or source of electrical energy 24.

In Fig. 3, the signalling systems of Figs. 1 and 2 are combined and include thermostats 18 and 25, the thermostat 18 being adapted to operate a signal in the switchboard 10 and the thermostats 18 and 25 being adapted to operate signal mechanism 23 or if directly connected to the switchboard, a signal in the switchboard or both.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawing and described in the specification but only as indicated in the appended claim.

What is claimed is:

An automatic fire alarm system which, in combination with an electrical telephone system

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having a central station with signalling means thereat and conductors extending to a telephone receiver at a location remote from said central station and through which conductors electrical energy is adapted to be supplied for actuating said signalling means at said central station from said receiver, consists of a blinker element, a normally open thermostatically operated switch constructed to close by rise in temperature, and a circuit completing loop circuit connected to said conductors and incorporating in series in said loop said blinker element and said thermostatically operated switch, said loop being energized upon the closing of said thermostat from said telephone system.

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