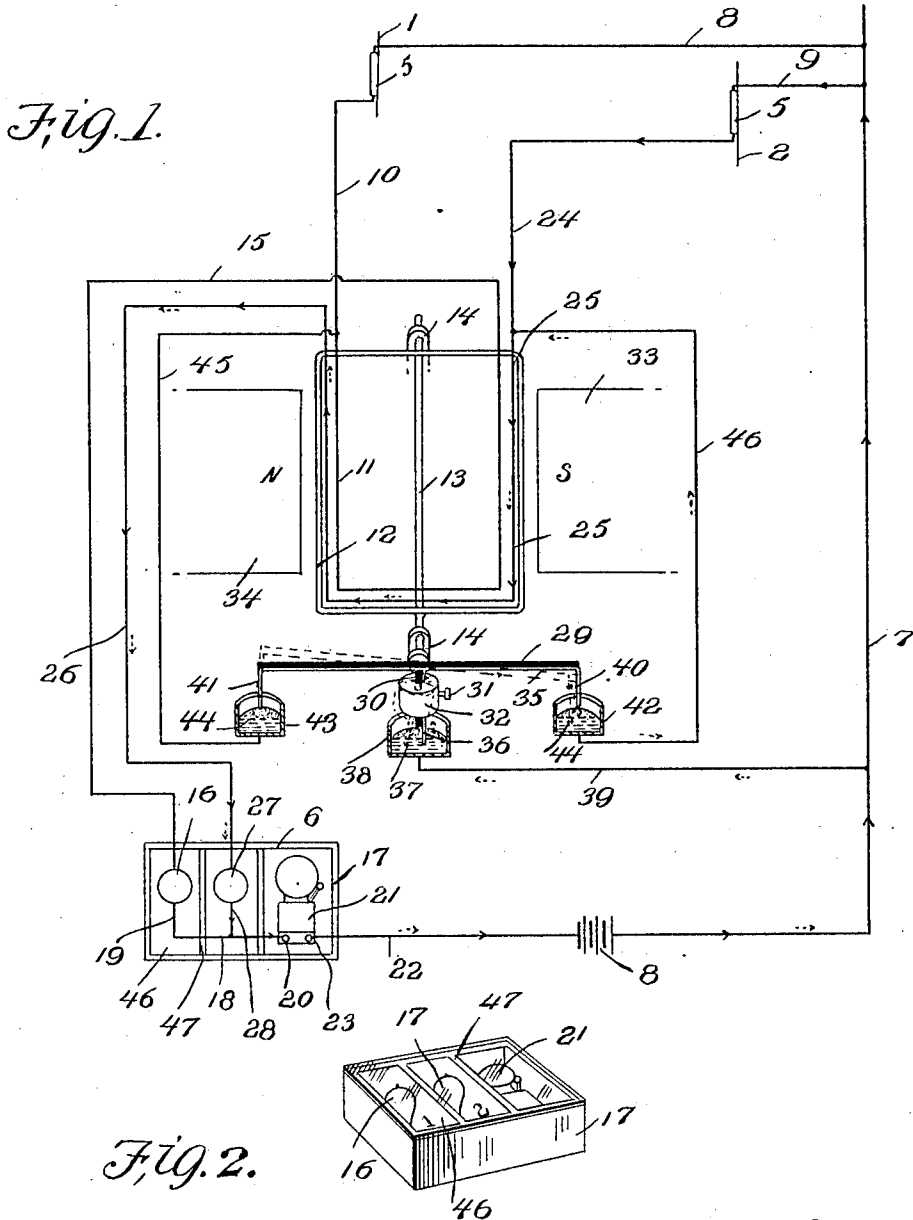


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TEMPERATURE ALARM.

APPLICATION FILED JUNE 30, 1911.

1,048,349.

Patented Dec. 24, 1912.



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TEMPERATURE-ALARM.

1,048,349.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed June 30, 1911. Serial No. 636,311.

To all whom it may concern:

Be it known that we, CHRISTIAN F. RUMOLD, JAMES P. FAULKNER, and JOHN WIRT DINSMORE, citizens of the United States, residing at Bereа, in the county of Madison and State of Kentucky, have invented new and useful Improvements in Temperature-Alarms, of which the following is a specification.

One object of the invention is to insure signaling at the central station of an electrically operated heat or fire alarm system even though the circuit closer be destroyed by the heat or fire at the place where said circuit closer is located.

Other objects will appear and be better understood from the following description taken in connection with the accompanying drawings, in which,

Figure 1 is a diagrammatic view of one embodiment of the invention. Fig. 2 is a detail perspective view of the signaling device.

Circuit closers 5 are arranged in different places such as in the different rooms of a building as indicated by the legendary matter in Fig. 1.

In Fig. 1 we have shown one method for connecting the circuit closing devices 5 in rooms 1 and 2 with a central station 6 which may be located in any preferred part of the building. The primary or main circuit extends by the conducting wire 7 from one pole of a suitable source of electric energy such as a battery 8'. The branch wires 8 and 9 connect one terminal of the circuit closers 5 with the conducting wire 7. Referring to Fig. 1 a conducting wire 10 connects the other terminal of the circuit closer 5 in room 1 with one end of a winding 11 on an armature frame 12. The shaft 13 of the armature frame 12 is supported by bearings 14 and a conducting wire 15 connects the opposite terminal of the winding 11 with a visible signaling device such as a lamp 16 arranged on the supporting plate or board 17 of the central station 6. A conducting wire 18 carried by the board 6 is herein shown as connected by a branch wire 19 with the lamp 16 and further connected to the binding post 20 of a bell 21. A conducting wire 22 connects the other binding post 23 of the bell with the other pole of the battery 8. The conducting wire 24 connects the opposite terminal of the circuit closer in room 2 with one end of a winding 25 wound on the

armature frame reversely to the winding 11. A conducting wire 26 connects the other terminal of the winding 25 with a suitable signaling device such as a lamp 27, and a branch wire 28 connects the lamp with the conducting wire 18.

An insulated cross arm 29 is carried by one end portion of the armature shaft 13 and has a centrally disposed depending slide 30 to which is adjustably secured in any preferred manner such as by a set screw 31, a weight 32 which operates to hold the frame 12 in a horizontal position between the poles 33 and 34 of a permanent magnet. A conductor 35 is connected to the cross-bar 29 and has a depending central portion 36 which depends into a suitable conducting agent such as a body of mercury 37 contained in a metallic cup 38 which is connected to the conducting wire 7 by means of a conductor 39. The opposite ends of the conductor 35 are provided with depending extensions 40 and 41 which extend into cups 42 and 43 containing a suitable conducting agent such as mercury 44. In their normal positions the extensions 40 and 41 do not dip into the mercury 44. The secondary circuit extends by a conducting wire 45 connected with the cup 43 and with the conducting wire 10 and also by the wire 39 connected to the cup 38. The cup 42 is connected to the conducting wire 24 by means of a conducting wire 46. This secondary circuit, it will be noted, has two paths for the current each of which is connected in parallel or multiple with the primary circuit.

If the circuit be closed in room 1 the main circuit will extend through the conducting wires 7, 8, circuit closer 5, wire 10, armature coil 11, conducting wire 15, through the lamp 16, wire 18, bell 20, and wire 22 back to the battery 8. Thus it will be seen that the current will cause the filament in the lamp 16 to glow and ring the bell 21. As shown in Fig. 2 the lamps 16 and 27 are arranged in compartments 46 the partitions 47 of which are opaque, and each compartment is numbered to correspond to the numbers of the rooms in which the circuit closers are located. Thus it will be seen that when the lamp 16 is lighted attention will be directed to the central station 6 by the bells ringing whereby the lighting up of the compartment 46 will indicate to the observer the presence of fire or excessive heat

in room 1. It will be observed that the armature will turn when the current passes through the winding 11, this turning movement, however, will be limited by the extensions 41 contacting with the cup 43. This contact between the conductor 41 and cup 43 will close the secondary circuit which now extends by wires 7, 39, mercury 37, conductors 36, 35, 41, 43, 45, 32, winding 11, conductors 15, lamp 16, conductors 19, 18, bell 21, conductor 22 to battery 8 so that in the event of the circuit closer 5 in room 1 being destroyed by the heat the circuit will still be closed through the lamp 16 and bell.

In the event of fire in room 2 the circuit closer 5 thereof will be closed and the main circuit will extend by wires 7, 9, circuit closed 5, conductor 24, winding 25, conductor 26, lamp 27, conductors 28, 18, bell and conductor 22 to battery 8. It will be observed that the armature will, by virtue of the reversed winding 25, be rocked in a direction opposite to that first described when the current passes through the winding 25 so that the extension 40 will dip into the mercury in the cup 42 and close the secondary circuit which then extends by wire 39, extension 36, conductor 35, extension 40, conductor 46, winding 25, conductor 26, lamp 27, conductors 28 and 18, bell and conductor 22 to battery 8 so that in the event of the circuit closer in room 2 being destroyed the circuit through the bell 21 and lamp 27 will be maintained.

What we claim as new is:

1. The combination with a primary circuit, of an electrically operated signal in said circuit, an armature in said circuit, a secondary circuit connected in parallel with

the primary circuit and including said signal and armature, a permanent magnet adjacent the armature and adapted to rock the same upon the closing of the primary circuit, a cross arm connected to the armature and operable in the movement thereof, and means associated with said cross arm and adapted to close the secondary circuit in the movement of the armature when the primary circuit is closed whereby the signal will be energized independently of the condition of the primary circuit.

2. The combination with a primary circuit, of an electrically operated signal in the circuit, a circuit closer in the circuit, an armature in said circuit, a secondary circuit connected in multiple with the primary circuit and including said signal and armature, a permanent magnet adjacent the armature and adapted to rock the same upon the closing of the primary circuit, a cross arm connected to said armature and movable therewith, said primary circuit including two paths for the current and adapted to rock the armature in relatively reverse directions according to the path of the current, and means associated with the cross arm and operable in either movement of the armature to close the secondary circuit whereby the signal will remain energized independently of the condition of the primary circuit.

In testimony whereof we affix our signatures in presence of two witnesses.

CHRISTIAN F. RUMOLD.
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JOHN WIRT DINSMORE.

Witnesses:

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