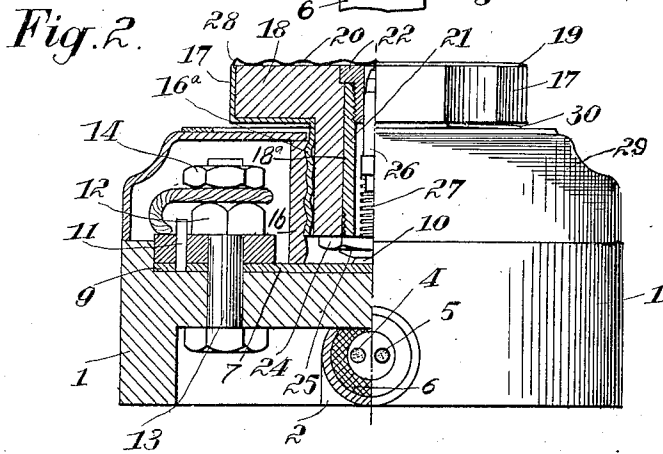
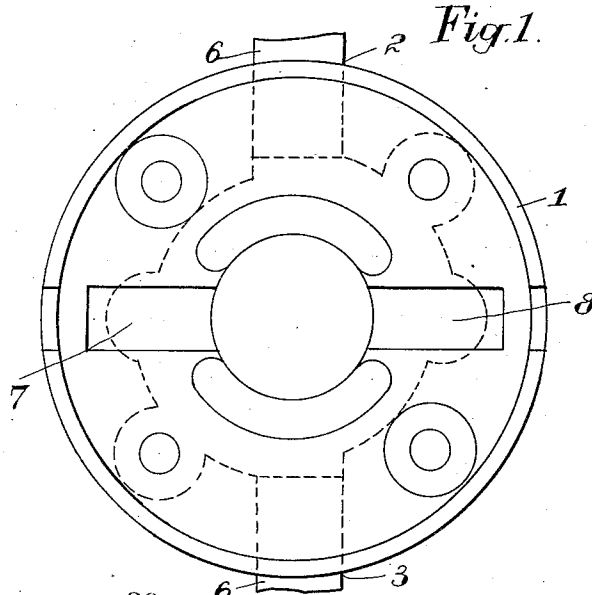


G. ADAM.
 THERMAL CIRCUIT CONTROLLING DEVICE.
 APPLICATION FILED JULY 17, 1911.

1,063,101.

Patented May 27, 1913.



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THERMAL CIRCUIT-CONTROLLING DEVICE.

1,063,101.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed July 17, 1911. Serial No. 638,970.

To all whom it may concern:

Be it known that I, GEORGES ADAM, a citizen of the French Republic, and residing at 56 Rue Notre Dame des Champs, Paris, France, have invented certain new and useful Improvements in Thermal Circuit-Controlling Devices, of which the following is a specification.

My present invention relates to circuit controlled devices and more particularly to that class of devices used in connection with signal apparatus, such as annunciators, to set the latter into operation when the circuit controlling device is actuated through being exposed to heat at a temperature of approximate predetermined degree.

The principal object of my invention is to provide a socket and a detachable plug structure for reception by the socket, the electrical connections being suitably connected to the socket, which latter is preferably permanently located, while the plug structure contains the mechanism for either completing or breaking the electric circuit as may be desired.

A further object of my invention is to provide the plug with a distinguishable portion, which, when freed by action of heat, becomes detached from the plug or its supporting structure and permits actuation of the electric controlled mechanism therein. By this construction and operation of parts the device in proximity to which the atmosphere has attained such temperature, to actuate the same, may be readily discovered by the absence of the distinguishable portion from its place in connection with the device.

Since the actuation of the circuit controlled means is attained, in the first instance, by the fusing of a certain portion thereof, the plug becomes useless for further actuation until it is again assembled, however, it may be easily and quickly removed from the socket and replaced by another assembled plug in readiness to respond at the temperature at which it is designed to be actuated.

In the drawings, forming a part of this specification: Figure 1 is a plan view of the socket structure. Fig. 2 is a side elevation, parts being shown in central vertical section to disclose details of construction, of a device embodying my invention and adapted for use in connection with a normally closed circuit.

Similar characters refer to similar parts throughout the several views.

The socket structure, which may be identical for either a normally closed or a normally open circuit, comprises a base member 1 of non-conductive substance, such as porcelain, and is provided with openings 2 and 3 for the entrance of wires 4 and 5 which may be inclosed in a suitable conduit 6. The face of the base member is provided with recesses as at 7 and 8, the former recess being adapted to receive a conducting strip 9 provided with a contact 10, while the recess 8, receives a conducting member 15 provided with an internally threaded annular portion 16. The conducting members are nowhere in contact with each other and are mounted on the insulated base member 1 by means of binding posts which may consist of a bolt 13, a nut 12 screwed thereon to rigidly retain its respective conducting member in place, and a supplementary nut 14 to bind the wire in close contact to the portions of the binding posts. A pin 11 may be provided for each conducting member to prevent displacement of the nut 12.

As shown in the drawings, wire 4 may be electrically connected to conductor 9 while wire 5 may be electrically connected to conductor 16. A cap 29 may be provided to protect the conducting members and associated parts.

When the device is to be used in connection with a normally closed circuit, that is, actuation of the device by the fusion of certain portions of the plug breaks a normally closed circuit, the plug, as shown in Fig. 2, is inserted into the socket structure. Such a plug includes a non-conductive body portion 18 having a central opening 18^a. About a portion of the exterior of the portion 18, a metallic shell 17 is formed, and provided with a threaded portion 16^a to engage the internally threaded annular portion 16 and by which the plug is detachably secured to the socket structure. Over the top of the plug a corrugated disk 20, which is secured in place by being soldered or secured by a fusible metal at its margin or the margin or upstanding portion 19 of the member 17. It is this disk 20 that becomes dislocated from the plug and permits actuation of the device, as will be subsequently described, by the fusing of the material 28 at a certain degree of temperature. The

socket structure and plug, exclusive of the disk 20, may be broadly termed a base structure normally supporting the disk 20. It is obvious that the absence of this disk from the plug or face of the base structure, per se, would be quickly noticed after the alarm is sounded and by its displacement the particular device in proximity to which the atmosphere has attained a certain temperature will be in evidence. Within the opening 18^a of the portion 18 is a tubular member 21 externally threaded at one end to receive a nut 24, and internally threaded at its opposite end to receive a nut 22 to retain the member 21 in place. The nut 22 guides a plunger 26 of conductive material which is normally forced into contact with the disk 20 by a spring 27. The lower end of the member 21 is provided with a contact 25 for engagement with the contact 10. The plug is screwed into the socket structure and may be retained in position with the contacts 10 and 25 in engagement by a coiled spring 30 of non-corrosive material, which, through its expansion, resists movement of the plug through vibration or similar disturbances.

The operation of the device as disclosed in Fig. 2 is, assuming the circuit normally entering the apparatus by wire, it passes through conductor 9, through contacts 10 and 25 through plug 26, disk 20, fusible material 28, shell 17, member 15 by means of portion 16, and out through wire 5. When the material 28 is fused, the plunger, responsive to spring 27, forces the disk 20 from the plug and the circuit is broken.

While I have herein shown and described one specific form of my invention I do not wish to be limited thereto except for such limitations as the claims may import.

I claim:—

1. In a thermal circuit controlling device, the combination of an insulated base, an internally threaded conducting member carried by said base and adapted for connection with one pole of the electric circuit, a contact carried by said base, spaced apart from said conducting member, and adapted for connection with the other pole of the electric circuit, a plug member of insulative material, an externally threaded con-

ducting member carried by said plug member for engagement with said internally threaded conducting member, a metallic plunger carried by said plug member and conductively connected with said contact, a bridging conductive member readily discriminable from said plug member and disposed at one face thereof in contact with said plunger, and means conductively connecting said bridging member with said externally threaded conducting member, but fusible at approximately a certain temperature, whereupon said bridging conducting member becomes detached from said plug member breaking the circuit and permitting of visual detection of the actuated device.

2. In a thermal circuit controlling device, the combination of an insulated base, an internally threaded conducting member carried by said base and adapted for connection with one of the poles of an electric circuit, a contact carried by said base, spaced apart from said conducting member and adapted for connection with the other pole of the electric circuit, a plug member of insulative material, an externally threaded conducting member carried by said plug member for engagement with said internally threaded conducting member, a metallic plunger carried by said plug member, a bridging conducting member readily discriminable from said plug member and disposed at one face thereof in contact with said plunger, a metallic spring normally forcing said plunger in contact with said bridging member, and conductively connecting the same with said contact, and means conductively connecting said bridging member with said externally threaded conducting member, but fusible at approximately a certain temperature, whereupon said bridging conducting member becomes detached from said plug member, breaking the circuit and permitting of visual detection of the actuated device.

In testimony whereof, I have hereunto set my hand in presence of two witnesses.

GEORGES ADAM.

Witnesses:

H. C. COXE,
P. MIRON.