J. MARINO.

AUTOMATIC FIRE ALARM.

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1,253,071.

Patented Jan. 8, 1918.

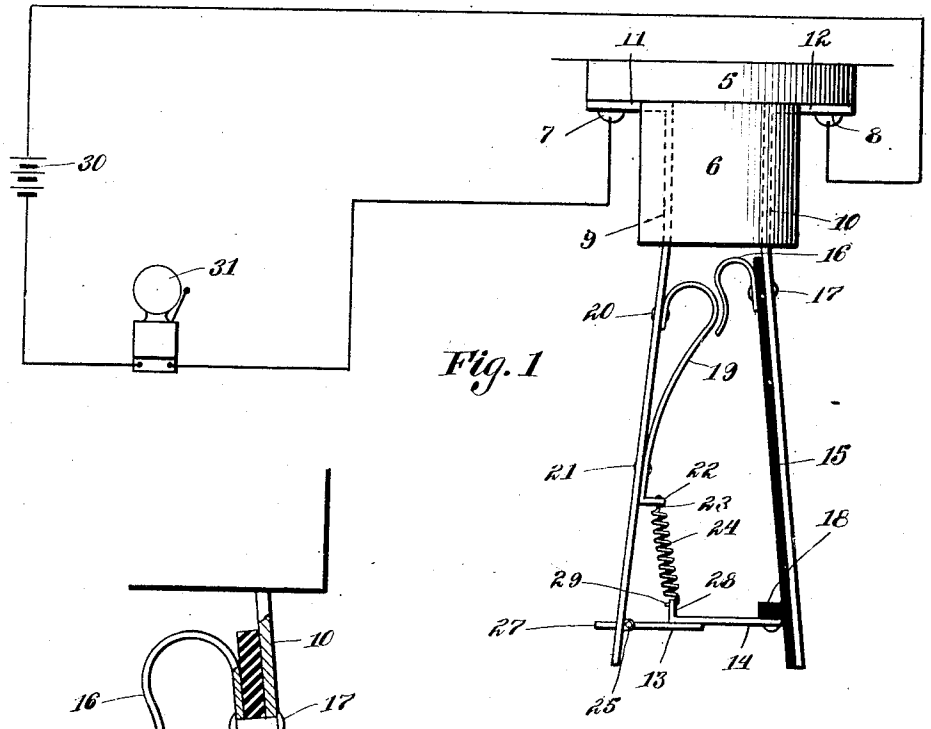


Fig. 1

Fig. 2

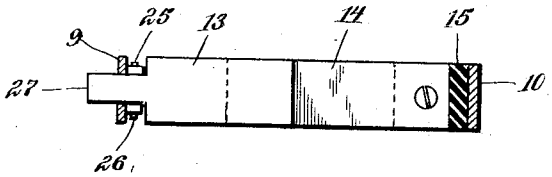


Fig. 3

WITNESSES

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AUTOMATIC FIRE-ALARM.

1,253,071. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed April 14, 1917. Serial No. 162,130.

To all whom it may concern:

Be it known that I, JAMES MARINO, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented new and useful Improvements in Automatic Fire-Alarms, of which the following is a specification.

This invention is an automatic fire alarm more particularly adapted for use in dwellings or buildings where it is desired to give an automatic signal to indicate the presence of abnormal heat, such as a fire burning the contents of the building or dwelling.

One object of the invention is to provide an automatic circuit closing means that will automatically close the circuit in the presence of excess heat.

Another object of the invention is to provide a simple construction that will be positive in operation, and one that may be readily replaced in an open circuit condition after having been closed.

The invention, broadly stated, comprises a socket having arms extending outwardly therefrom carrying spring contacts, one of said contacts being provided with a pin or stud, and one of the arms being provided with insulation extending throughout its length and being provided with a seat, a bridge interposed between the arms formed of two pieces, one of which is provided with a projecting pin or stud, and one piece of said bridge being adapted to be secured to the seat, the two portions serving as connections for an interposed tension spring, and terminals for the contacts carried by the socket.

One practical form of construction will be described and illustrated in the accompanying drawing, in which:—

Figure 1 is a diagrammatic view;

Fig. 2 is a sectional view; and

Fig. 3 is a plan view of the bridge.

In the embodiment shown in the accompanying drawing, the socket is provided with a base 5 having a projecting portion 6. The base portion 5 may be provided with suitable holes or openings in which may be secured the terminals indicated at 7 and 8. These terminals 7 and 8 are for the purpose of connecting the outside circuit to the socket.

The projecting portion 6 is provided with suitable passages through which pass the arms 9 and 10. As shown in Fig. 1, these arms 9 and 10 are provided with angular portions indicated at 11 and 12. These angular portions are provided with suitable holes for securement to the terminals 7 and 8 so as to connect the circuit continuously from the outside circuit through each of the arms. The arms 9 and 10 project from this projecting portion 6 of the socket and are spaced apart by a bridge or spacing member formed in two parts, as indicated at 13 and 14.

The arm 10 is provided with an insulating strip indicated at 15, which extends from the projecting portion 6 to the extreme free end of the arm 10. Secured to the arm 10 adjacent this projecting portion is a spring contact indicated at 16. This spring contact 16 may be secured to the arm 10 in any usual or convenient way, one of which is indicated by the rivet 17. As shown, the spring contact 16 is mounted upon the insulating strip 15, but in electrical contact with the arm 10.

The insulating strip 15 is provided adjacent the free end with a seat, indicated at 18. The purpose of this seat will be hereinafter described. The arm 9 extending from the projecting portion 6 of the socket is also provided with a spring contact, indicated at 19. This spring contact 19 may be secured to the arm 9 at the points indicated at 20 and 21. These points of securement may be of any usual or customary type, and are shown as being riveted.

The lower end of the spring contact 19 is provided with an angular projecting end indicated at 22, which is provided with a point of engagement indicated at 23 for a tension spring indicated at 24. As shown, the spring contact 19 bends outwardly and has a curved outline somewhat similar to a question mark. The bowed out portion is of such shape that it will conform to the spring contact 16, which is provided with a free end for making rubbing contact and also to exert pressure when they are in engagement.

The lower end of the arm 9 is provided with suitable attaching means to provide a pivotal contact with the portion 13 which forms a part of the bridge or spacing member. The portion 13 is provided with the pins 25 and 26 for forming the pivotal connection. One end of this portion 13 is provided with a tongue 27 which projects through a suitable opening formed in the arm 9. This tongue 27 may also serve as a handle when it is desired to lift the portion 13 into contact with the portion 14. The

portion 14 of the bridge member is preferably L-shaped, one end being provided with a suitable connection for engagement with the seat 18 formed upon the contact strip 15. The engagement may be by screws or rivets as is desired.

As shown more particularly in Fig. 1, the portion 14 has its short limb projecting upwardly and forming a point of attachment for the spring 24, the upstanding portion being indicated at 28 and the point of attachment at 29. As shown in this Fig. 1, the two portions 13 and 14 forming the bridge overlap slightly, and at the point of overlapping are secured together by means of solder or any other fusible material. When soldered together, these two portions serve to make a unitary structure which space the arms 9 and 10 apart. When abnormal heat causes the solder to loosen the connections between the two portions 13 and 14, the portion 13 will tilt or swing away from the portion 14, at which time the spring 24 will act to draw the two arms together. As the two arms approach each other, the spring contacts 16 and 19 are forced into engagement with a slight rubbing contact, and the circuit is closed.

The external circuit, which is connected to the terminals 7 and 8 is provided with suitable conductors in which may be disposed a source of electrical energy, indicated at 30, and a signal 31 such as is shown by the bell. If desired, the bell and battery may be combined in one box.

The socket is preferably formed of some suitable insulating material and the arms 9 and 10 are formed of conducting material, as are likewise the spring contacts 16 and 19. This is done to reduce the resistance of the circuit, and the socket being made of insulating material provides against a leakage of the current.

The device by reason of its compact form may be placed in situations or places where fire may occur. When used within a dwelling, it is thought preferable to place the sockets in the ceiling and substantially centrally in each of the rooms. This placing of the sockets will protect each of the rooms separately, and should a fire occur within any one of the rooms its presence will be automatically indicated when the connection becomes unsoldered and the spring contacts 16 and 19 are brought together, thereby closing the circuit to the signal or bell.

Minor changes in the form, proportions, and details of construction may be resorted to without departing from the spirit of the invention or the scope of the appended claim.

What is claimed as new is:—

An automatic fire alarm comprising a socket, arms secured to the socket and provided with terminals, one of said arms being provided with insulation on its inwardly facing side, resilient contact elements carried by the arms, a spacing member composed of two portions that are held together by a fusible substance, and means connecting one of the arms with one portion of the spacing member and operating to pull the contact elements together upon the separation of the spacing member when separated by heat.

In testimony whereof I affix my signature.

JAMES MARINO.

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