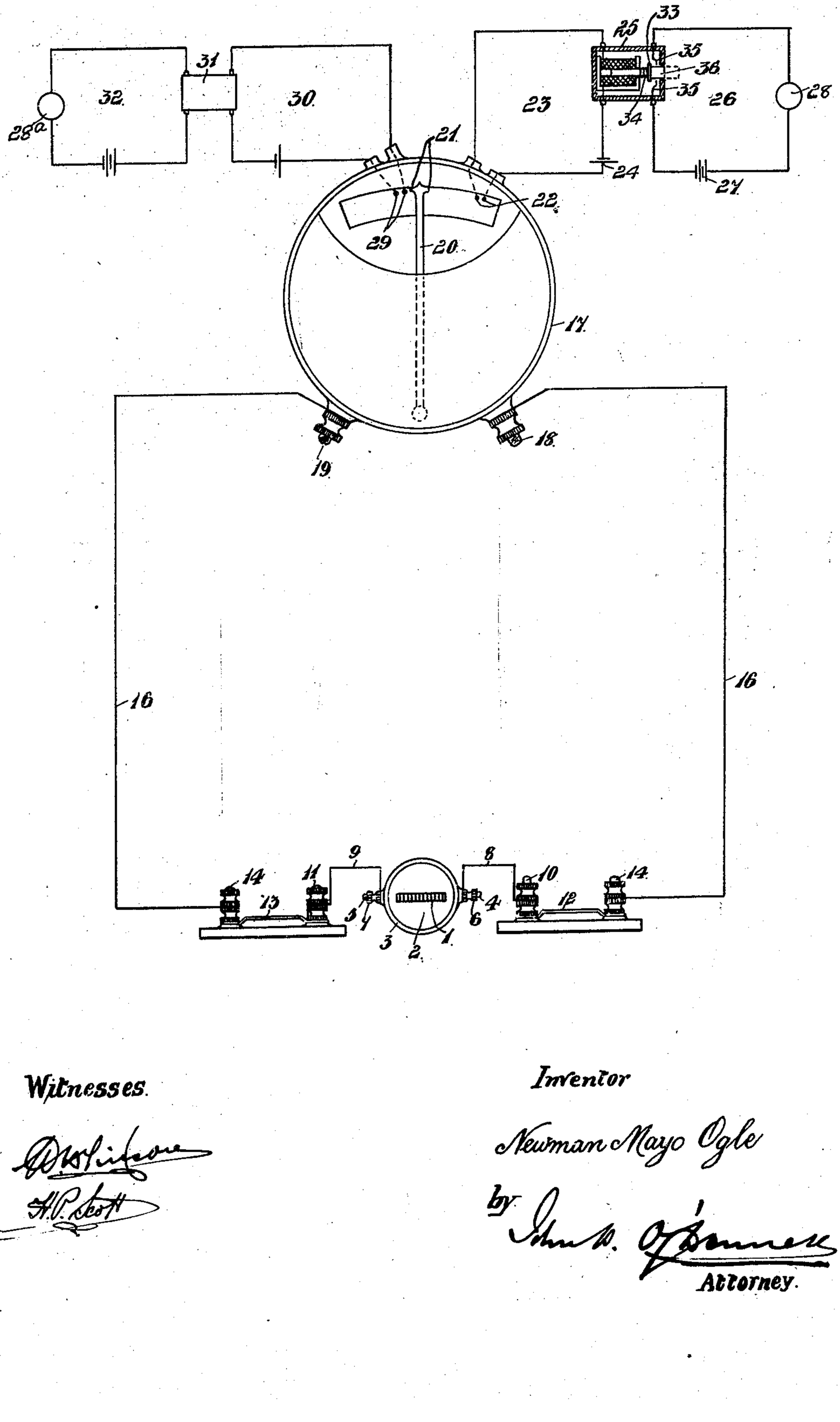
No. 861,761. PATENTED JULY 30, 1907.

N. M. OGLE.

FIRE ALARM SYSTEM.

APPLICATION FILED FEB. 23, 1907.



Witnesses.

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FIRE-ALARM SYSTEM.

No. 861,761. Specification of Letters Patent. Patented July 30, 1907.

Application filed Februarv 23, 1907. Serial No. 358,862.

To all whom it may concern:

Be it known that I, NEWMAN MAYO OGLE, a subject of the King of Great Britain and Ireland, residing at Worcester House, Walbrook, in the city and county of London, England, (whose post-office address is Worcester House, Walbrook, in the city and county of London, England,) have invented certain new and useful Improvements in or Relating to Fire-Alarm Systems; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has for its object improvements in or relating to fire alarm systems and consists principally in improvements in systems employing a device whereby the heat of the fire itself generates an electric current which is registered or indicated at some distance from the generating device by means of a suitable instrument. The electric current may be generated by a bimetal couple or joint arranged on a V shaped principle as in the well known thermopile so that if the junction is heated a current will flow to the cooler ends, and if this is multiplied as in the thermopile, a considerable current can be generated and a galvanometer, which may be any distance off, will register the current.

In order that the invention may be readily understood and carried into effect I will describe it with reference to the accompaying drawing which illustrates, diagrammatically, a fire alarm system according to this invention.

Referring to the drawing, 1 is the thermopile, or series of bimetal Vs, hereinbefore referred to, which are inclosed in insulating material 2.

3 is the metal casing surrounding the insulating material 2, suitable means, for instance a screw threaded hole, being provided in the casing for securing the device to the ceiling or other desired position in the room.

4 and 5 are terminals connected to the bimetal Vs or thermopile 1, 6 and 7 being terminal nuts screwed on the terminals 4 and 5 respectively. The terminals 4 and 5 are connected with wires 8 and 9 respectively which latter are connected through terminals 10 and 11 with fuses 12 and 13 which latter are also connected through the terminals 14 with the main circuit 16. 17 is the galvanometer which is also connected to the main circuit 16 through the terminals 18 and 19. The galvanometer needle 20 is platinized at 21.

22 are contact points at the open ends of the secondary circuit 23, which includes the battery 24 and polarized relay 25; connected with the relay 25 is the bell circuit 26 which includes the battery 27 and bell 28. 29 is another pair of contacts or contact points at the open end of another circuit 30 similar in all respects to the circuit 23 and in connection with a relay 31 and bell circuit 32 which are also the same as in the circuit 26.

If desired only one of the fuses (12 or 13) may be employed.

The contact made at 22 in the galvanometer is principally intended for the purpose of calling the attention of the man at the central or distant station to the fact that heat is generating and danger point being approached in the vicinity of the thermopile, and these contact points 22 together with the secondary circuit or circuits controlled thereby might, if desired, be omitted from the system.

The action is as follows:—Assuming a predetermined degree of heat attained in the vicinity of the thermopile 1 this will have the effect of generating an electric current which, through the connection shown, will be registered on the galvanometer whose needle 20 will be deflected to the right making contact with the points 22 thus closing the secondary or local circuit 23 whereby the armature 33 of the polarized relay 25 (which normally when no current is flowing is held in the position shown by the action of the magnet of the relay) is, through the action of spring 34, moved so as to make contact with the points 35 thus closing the circuit 26 and ringing the bell 28, the indicator 36 on the armature 33 being at the same time brought into view. This will, as above mentioned, warn the man at the central or distant station that heat has been generated, and if the heat increases sufficiently to melt either of the fuses 12 or 13 (for instance if the degree of heat at which the fuses will melt is reached which may be, for instance, 150° Fah.) the melting of the fuses will break the main circuit 16 whereupon the galvanometer needle 20 will rebound beyond the center or zero point and make contact with the contacts 29 thus closing the circuit 30, operating the relay 31 and through the latter the bell 28^a. On the ringing of the bell 28^a through the contact made at 29 as above described the man in charge of the galvanometer at the central station at once tests the main circuit in order to check if it be actually broken. This test may be made in any known or convenient manner, and with this system the man at the fire station or distant station can test the main circuit right through the thermopile.

It will be seen that with this invention no batteries are required in the main controlling circuit. Also a single line wire (16) only is employed in the main circuit.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a fire-alarm system, the combination, with a thermopile, a fuse, a current-register provided with a needle and contact-points, and a main circuit including all the said parts; of a secondary circuit connected to the said contact-points, a battery, a call-bell and a polarized relay all included in the said secondary circuit, and means

for placing the said needle in contact with the said points automatically when the said fuse is destroyed by heat.

2. In a fire-alarm system, the combination, with a thermopile, a fuse, a current-register provided with a needle and two pairs of contact points, and a main circuit connecting the said thermopile, fuse and current-register; of a secondary circuit connected to one of the said pairs of contact-points, a polarized relay, a battery and a call-bell all operatively connected with the said secondary circuit and actuated when the said thermopile is heated; a second secondary circuit connected to the other said pair of contact-points, and a polarized relay, a call-bell and a battery all included in the last said circuit and actuated automatically when the said fuse is destroyed by heat.

In testimony whereof I affix my signature, in presence of two witnesses.

NEWMAN MAYO OGLE.

Witnesses:
WILLIAM S. LART,
J. GROOM.