M. MOLONEY.

THERMOSTATIC CIRCUIT CLOSER.

APPLICATION FILED AUG. 30, 1916.

1,330,892. Patented Feb. 17, 1920.

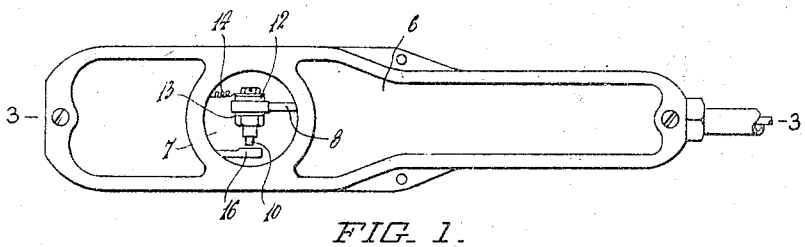


FIG. 1.

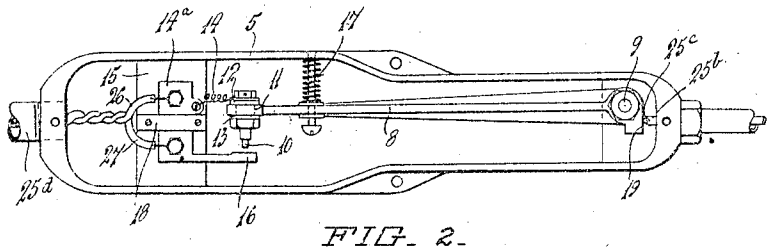


FIG. 2.

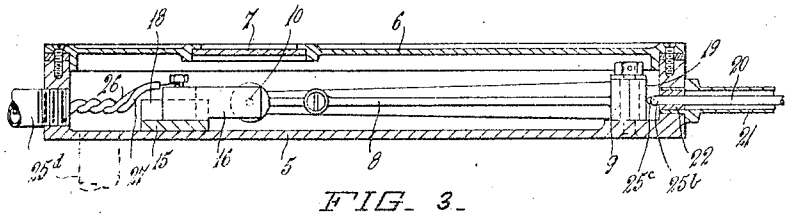


FIG. 3.

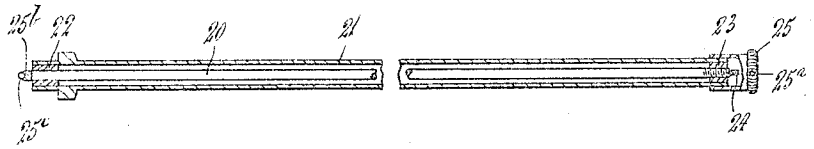


FIG. 4.

M Moloney
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UNITED STATES PATENT OFFICE.

MATTHEW MOLONEY, OF CHRISTCHURCH, NEW ZEALAND, ASSIGNOR TO VIGILANT AUTOMATIC FIRE ALARM COMPANY LIMITED, OF CHRISTCHURCH, NEW ZEALAND.

THERMOSTATIC CIRCUIT-CLOSER.

1,330,892. Specification of Letters Patent. Patented Feb. 17, 1920.

Application filed August 30, 1916. Serial No. 117,682.

To all whom it may concern:

Be it known that I, MATTHEW MOLONEY, a citizen of the Dominion of New Zealand, and residing at Christchurch, in the Provincial District of Canterbury, in the Dominion of New Zealand, electrician, have invented certain new and useful Thermostatic Circuit-Closers, of which the following is a specification.

This invention relates to apparatus used for giving an alarm upon the outbreak of a fire, and comprises a casing containing a lever connected by a flexible wire to an upper terminal of an electric circuit. A spring tends to force an insulated terminal held in the end of the lever into contact with a lower terminal of the electric circuit, and the said lever is normally held out of contact with the said lower terminal by a rod inclosed in and secured to the extremity of a sleeve fixed to the end of the casing.

Upon the outbreak of a fire the sleeve becomes heated and expands, thereby withdrawing the rod and allowing the terminal of the lever to come into contact with the said lower terminal and close the electric circuit.

Any ordinary signal such as an electric bell or a falling shutter is included in the electric circuit.

The drawing herewith illustrates the invention:—

Figure 1, is a side elevation of the apparatus,

Fig. 2, is a side elevation of the apparatus with the cover of the casing removed,

Fig. 3, is a sectional plan on line 3—3, Fig. 1,

Fig. 4, is an elevation partly in section of the sleeve and rod.

The casing 5 is fitted with a cover 6 having a sheet of glass 7 through which the lever 8 can be inspected. The lever is pivoted on a stud or pin 9 fixed to the casing 5. The end of the lever is fitted with a terminal 10 insulated from the lever by a bush or sleeve 11 and washers 12 and 13. A flexible silk covered wire 14 connects the terminal 10 to an upper terminal 14^a mounted on a block 15 of insulating material fixed to the casing 5. A lower terminal 16 with which the terminal 10 is adapted to come into contact is also mounted on the block 15. A spring 17, in compression between the lever 8 and the casing, tends to force the terminal 10 of the lever into contact with the lower terminal 16. A distance piece 18 of insulating material separates the upper terminal 14^a from the lower terminal 16.

The lever 8 is made with a face 19 extending below the stud 9, and a rod 20 enters the casing 5 at a lower level than the said stud. A sleeve 21 inclosing the rod 20 is screwed into the end of the casing, and has a bush 22 for guiding the rod 20. The outer end of the sleeve has another bush 23 into which the rod is screwed, the end 24 of the rod being angular in cross section. A cap 25 screwed upon the end of the sleeve covers the end 24 of the rod. The end of the cap 25 is milled and has holes 25^a for inserting a wire or the like for turning the said cap. The end 25^b of the rod is made of silver steel and is recessed and holds loosely a ball 25^c made of silver steel, or the end of the rod is made hemispherical, to reduce friction against the face 19.

A conduit 25^d is screwed, or otherwise secured, to the end or back of the casing, through which wires 26 and 27 of an electric circuit pass and are connected to the terminals 14^a and 16 respectively. An ordinary electric bell or a falling shutter or other signal are included in the electric circuit of the wires 26 and 27. As the electric bell and the shutter are of any usual construction they are not shown in the drawing.

The end 24 permits the rod 20 to be readily turned in the bush 23 to adjust the distance of the terminal 10 in relation to the lower terminal 16.

Normally the rod 20 presses against the face 19 and prevents the terminal 10 from being forced into contact with the lower terminal 16 by the spring 17, and upon an outbreak of fire the sleeve 21 becomes heated and consequently extends in length, thereby withdrawing the rod and allowing the terminal 10 to come into contact with the lower terminal 16 and close the electric circuit of the wires 26 and 27. The closing of the circuit causes an electric bell to ring in a well known way.

What I do claim and desire to secure by Letters Patent of the United States is:—

1. A thermostatic circuit closure comprising a closed casing, a pivotally mounted lever located within the casing, a movable terminal carried by and insulated from said lever, a second terminal within the casing, a flexible

current conductor connecting the movable terminal to the second terminal, a stationary terminal within the casing insulated from the second terminal, alarm circuit wires extending into the casing and connected to the second and stationary terminals, said movable terminal being normally spaced away from the stationary terminal to maintain the alarm circuit open, a compression spring engaging the lever and urging the movable terminal toward said stationary terminal, a heat operated expansible tube having one of its ends secured to the casing and being located on the exterior of the casing and a rod fixed to the other end of the tube, extending into the casing and engaging the lever for normally maintaining the movable and stationary terminals apart.

2. An improved alarm, comprising in combination, a casing, a lever pivoted at one end within said casing, contact members carried by said lever and casing, an electric circuit including said contacts, and expansible means secured to the exterior of said casing, including a member extending into said casing, and a ball loosely held in a recess in the inner end of said member and contacting with said lever, said means on expansion thereof moving said member to effect movement of said lever to carry said contacts into engagement.

In testimony where I have signed my name to this specification in the presence of two witnesses.

MATTHEW MOLONEY.

Witnesses:

E. HYDE,

F. L. EASTGATE.