A. C. FARLEY & W. B. McDONALD.

AUTOMATIC ALARM.

APPLICATION FILED JUNE 3, 1910.

998,485. **Patented July 18, 1911.**

Fig. 1.

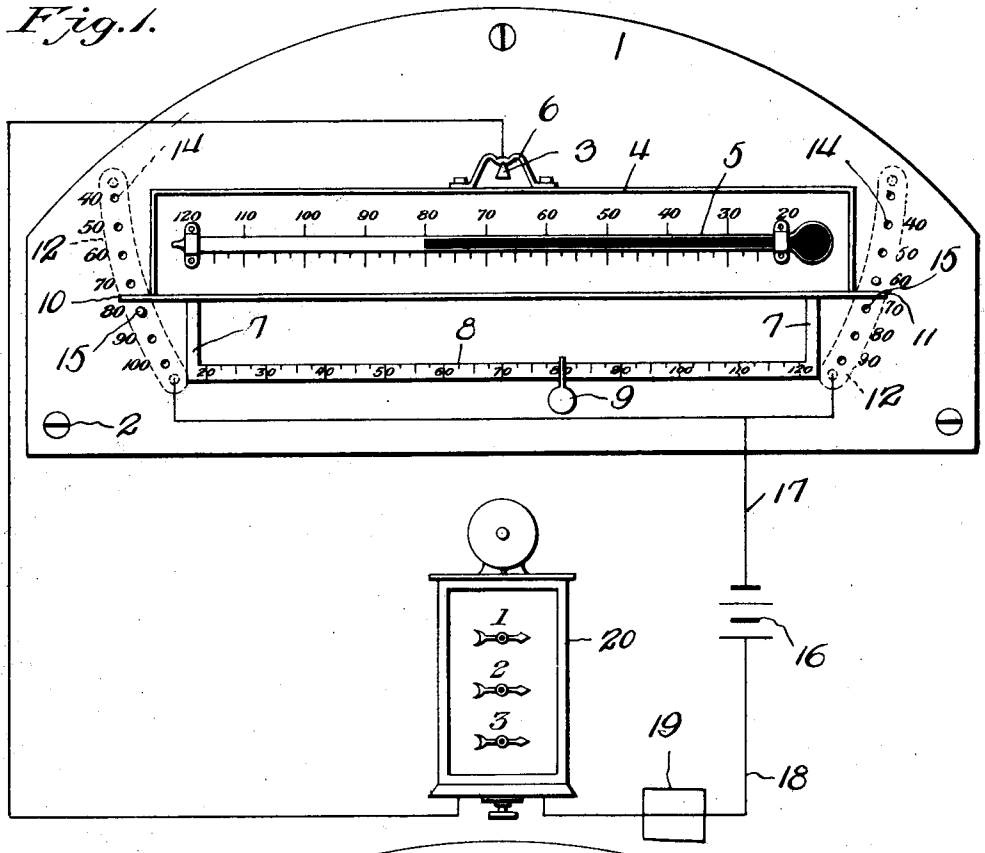
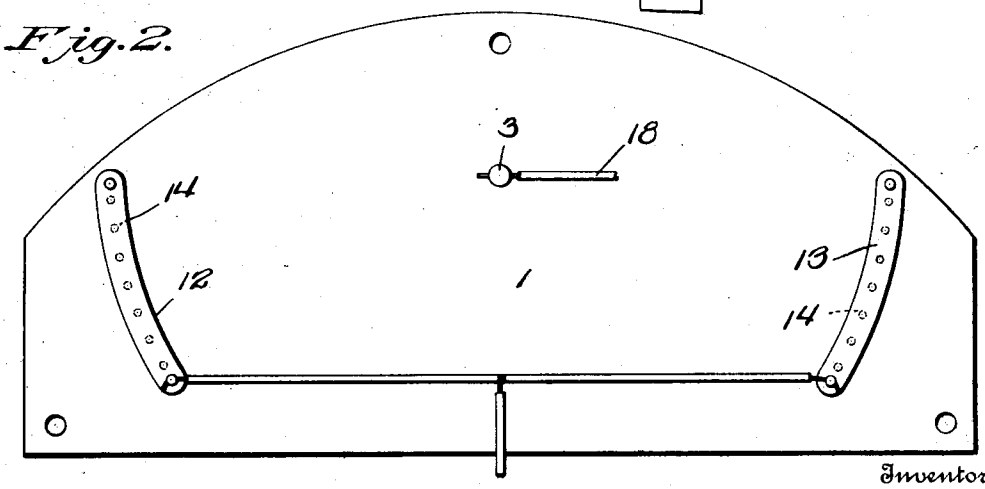


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED C. FARLEY AND WILLIAM B. McDONALD, OF SHINGLEHOUSE, PENNSYLVANIA; SAID FARLEY ASSIGNOR OF ONE-THIRD OF THE RIGHT TO CHARLES A. WOLCOTT, OF SHINGLEHOUSE, PENNSYLVANIA.

AUTOMATIC ALARM.

998,485. Specification of Letters Patent. **Patented July 18, 1911.**

Application filed June 3, 1910. Serial No. 564,849.

To all whom it may concern:

Be it known that we, ALFRED C. FARLEY and WILLIAM B. McDONALD, citizens of the United States, residing at Shinglehouse, in the county of Potter and State of Pennsylvania, have invented new and useful Improvements in Automatic Alarms, of which the following is a specification.

This invention relates to an improved automatic alarm device, comprehending more specifically a thermostatic control for alarm mechanisms so constructed that it may be adjusted to control between any desired limits.

The main object of the present invention is the provision of a holder designed to form one terminal of a control circuit, the opposing terminal being adjustable at will to varied degrees of control, the holder being arranged to include a thermometer which with the temperature at a predetermined degree will maintain the holder in equilibrium, a variation from the predetermined degree in either direction and to a different extent serving to overbalance the holder with the effect to close the control circuit and energize the indicating and alarm devices arranged in said circuit.

The invention in the preferred form of details will be described in the following specification reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a front elevation of the improved device, the alarm circuit and an annunciator being illustrated. Fig. 2 is a rear view of the device.

Referring particularly to the accompanying drawings, our improved automatic alarm includes a base 1 of any desired material and size proportionately formed, as with screw holes 2 whereby it may be secured in any desired position to a fixture. Upon the base at an appropriate point therein is a bearing member 3 shaped to provide a knife edge. In connection with the base 1 we utilize a holder 4 preferably a rectangular box-like body in which is secured in any usual or preferred manner an ordinary thermometer 5. A bracket 6 is secured centrally to the upper portion of the holder and formed to engage the knife edge of the bearing 3, whereby to accurately balance the holder thereon. Depending from the lower edge of the holder are bars 7 which at their lower ends support a balance rod 8 marked with degree marks corresponding to or reversely arranged with respect to said marks on the thermometer. A balance weight 9 is adjustable to any desired point on the balance bar. The holder 4 is provided with end projections 10 and 11, and on the rear surface of the holder in the plane of movement of such projections in the swinging of the holder are secured contact strips 12 and 13. These strips are insulated from the base and are formed with a series of openings 14 which register with similar openings in the base, whereby metallic pegs 15 may be placed in any of the openings 14 and thereby secure electrical connection with the strips, the pegs being of such length as to project beyond the lower face of the base in the path of movement of the projections 10 and 11.

The apparatus is designed to be used in connection with a controlling circuit including a source of energy 16 and conductors 17 and 18, the former of which is by a branch conductor connected to both of the strips 12 and 13 while the latter is connected directly to the bar 3 and through the latter to the holder projections 10 and 11. The various openings 14 in the contact strips and base are arranged with respect to the spacing as of the major degree marks on the thermometer, as will be apparent from Fig. 1 of the drawings. The alarm circuit may include an audible alarm 19, and if a series of devices are used, the respective circuits may in the usual manner include an annunciator 20 arranged to indicate the particular location of the device sounding the alarm.

With the device constructed as described, the operation is as follows. Assuming that the temperature to be maintained at 80 degrees and that it is desired to indicate to the device a variation from such temperature of five degrees either way, the weight 9 is adjusted on the balance bar to the 80 degree mark which, with the temperature at 80 degrees maintains an accurate balance of the holder. The pegs 15 are placed in the openings 14 of the respective strips 12 and 13 corresponding to the 80 degree and 70 degree marks thereon. In the event the temperature should fall, the holder will be so affected by the weight 9 as to cause the

projection 11 to engage the peg 15 of the strip 13 thereby closing the circuit, sounding the alarm and in the event of the use of an annunciator, indicating the position of the particular device being operated. In the event of the temperature increasing beyond the 80 degree mark the weight of the mercury will overbalance the holder causing the projection 10 to engage the previously set pin 15, closing the circuit and sounding the alarm.

The device provides a simple means whereby the temperature in a particular apartment may be readily indicated within any prescribed limits, and in this connection the invention is particularly effective as an automatic fire alarm since any sudden increase in temperature would close the circuit as indicated and sound the alarm. The device is of course capable of many additional uses as for example insuring that the temperature in a refrigerating plant shall be maintained between any two prescribed limits or the operator notified, and in this connection it is to be understood that we contemplate the construction of the various parts of the device in such variation as will adapt it for sounding an alarm upon the temperature at any particular point reaching any degree above or below the predetermined and desired degree.

The various parts of the device are to be made of any desired material capable of permitting the functions described and in any size which may be found serviceable for the use to which the particular instrument is to be put.

Having thus described the invention, what is claimed is—

An alarm control including a base, spaced contact strips connected to opposite end portions of the base, an alarm circuit having one terminal connected to said strips, said strips being formed with openings, plugs adapted to be inserted in any of the openings in the strips, a bearing extending laterally from one face of the base, a normally horizontally disposed swinging frame depending from said bearings and connected to the remaining terminal of the circuit, projections at the opposite ends of the swinging frame to engage the plugs in the strips in the movement of the frame, a thermometer mounted in the frame with the column of mercury controlling the balance of the frame, and a weight adjustable on the frame to counteract the effect of the column of mercury at a predetermined temperature.

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

ALFRED C. FARLEY.
WILLIAM B. McDONALD.

Witnesses:
C. A. WOLCOTT,
BERT. WOODARD.