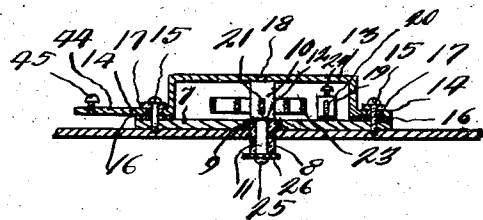
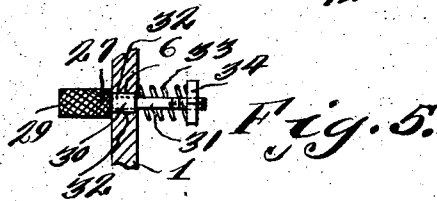
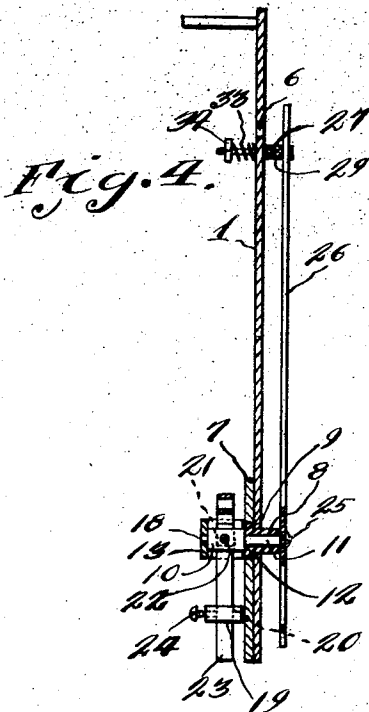
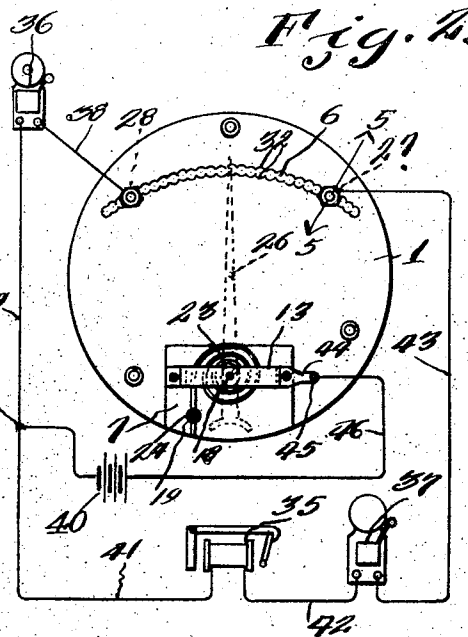
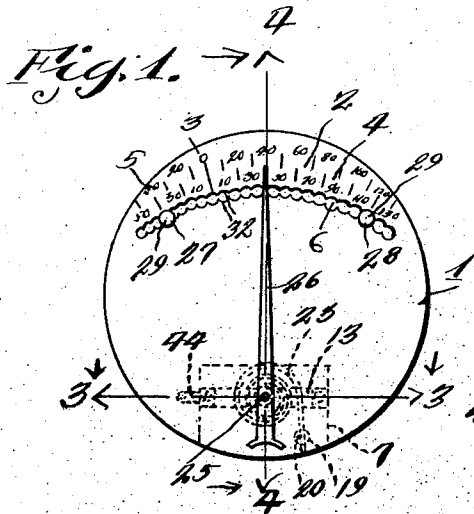


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ELECTRIC AND THERMOSTATIC INDICATOR AND ALARM.
APPLICATION FILED MAR. 29, 1917.

1,297,326.

Patented Mar. 18, 1919.



Witnesses

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Fig. 8.

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UNITED STATES PATENT OFFICE.

LARS J. DAHL AND ALBERT E. ALLEN, OF ALPHA, MINNESOTA.

ELECTRIC AND THERMOSTATIC INDICATOR AND ALARM.

1,297,326.

Specification of Letters Patent.

Patented Mar. 18, 1919.

Application filed March 29, 1917. Serial No. 158,295.

To all whom it may concern:

Be it known that we, LARS J. DAHL and ALBERT E. ALLEN, citizens of the United States, residing at Alpha, in the county of Jackson, State of Minnesota, have invented new and useful Electric and Thermostatic Indicators and Alarms; and we 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 relates to an improved electric and thermostatic indicator and alarm, and one of the objects of the invention is the provision of a high and low temperature dial, and a thermostat controlled by means of a spring, which is designed to expand or contract corresponding to the temperature, to throw the pointer or indicator over the dial.

A further object of the invention is the provision of abutment contacts adjustable toward and from each other on a guide, and with which contact the indicator cooperates, for closing a circuit, which in turn operates an annunciator and sounds an alarm.

A further object of the invention is to provide improved means for holding each of the abutment contacts in adjusted positions and allowing the contacts to be easily and quickly adjusted.

In practical fields, the details of construction may necessitate alterations falling within the scope of what is claimed.

The invention comprises further features and combinations of parts, as hereinafter set forth, shown in the drawings, and claimed.

In the drawings:—

Figure 1 is a view in elevation of the temperature indicator, which is designed to be connected in an electric circuit, as shown in Fig. 2, whereby an annunciator and an alarm may be actuated.

Fig. 2 is a rear elevation of Fig. 1, showing the temperature indicator in said circuit, to actuate the annunciator and the alarm.

Fig. 3 is a sectional view on line 3—3 of Fig. 1.

Fig. 4 is a sectional view on line 4—4 of Fig. 1.

Fig. 5 is a sectional view on line 5—5 of Fig. 2.

Fig. 6 is a detail perspective view, of one of the adjustable abutment contacts, such as shown in Fig. 5.

Referring more especially to the drawings,

1 designates a circular plate, which may be constructed of any suitable material, and on one face thereof a segment dial 2 is provided. This dial has graduations, which increase from zero 3 to 130 on one side, as shown at 4, and decrease below zero on the other side, as shown at 5. Concentric with this dial of graduations, indicating high and low temperature, is a segment slot 6, which is formed in the circular plate. A suitable copper plate 7 is arranged on one face of the plate 1 opposite the dial, and extending through the plate 7 and the plate 1 is a bushing 8 constructed of any suitable insulating material. This bushing has a shoulder 9 engaging the rear face of the plate 1. A suitable stud 10 is provided. This stud has a reduced extension 11 fitting the bushing 8, and which stud has a shoulder 12 engaging one end of the bushing, to assist in holding the stud in place. An arched plate or metal strap 13 has its ears 14 secured to the plate 7, by means of screws 15, which also extend into the plate 1, there being insulating material 16, between the ears and the plate 7. Suitable bushings of insulation 17 surround the screws 15, which, together with the insulation 16, insulate the strap 13 from the plate 7. The rear end of the rockable stud has a reduced extension 18, which fits a suitable bearing in the arch part of the strap 13. Extending rearwardly from the plate 7 is a stud 19 of insulating material, and has an opening 20. Fitting an opening 21 in the stud 19, and secured in said opening by the screw 22, is one end of the thermo spring 23, which is coiled, as shown in the drawings clearly. The other end of the thermo spring fits and is secured in the opening 20 of the stud 19 by the set screw 24. By loosening the set screw and extending the spring further through the opening 20, the spring may be tightened, or the coils drawn closer together, thereby increasing the tension of the spring. By loosening the set screw 24 and allowing the end of the spring (which passes through the stud 19) to move in a reverse direction to the opening 20 and allowing the spring to expand, its tension may be decreased. Secured at 25 on the forward end of the extension 11, by riveting said extension, is an indicator or pointer 26, the pointed extremity of which is designed to move over the graduations of the dial, incident to the expansion and contraction of the thermo spring, the contraction and expansion of which is due the increase

and decrease of the temperature. Adjustably arranged in the segment slot 6 are abutment contacts 27 and 28, which may be adjusted toward and from zero. Each abutment contact comprises a body 29 having reduced extensions 30 and 31, one extending axially from the other, and the extension 30 extending axially from the body 29. Normally, the extension 30 engages any two opposite scallops 32 of the opposite edges of the slot 6, and owing to a spring 33 coiled about the extension 31 and interposed between the rear face of the plate 1 and the nut 34, the extension 30 is held in engagement with said opposite scallops, thereby holding the abutment contacts in position. By pulling outwardly upon the body of either abutment contact until the extension 30 disengages any two opposite scallops, the abutment contacts may be adjusted, owing to the extension 31 being a trifle less in diameter than the narrowest portion of the slot 6. A conventional form of annunciator 35 is illustrated, and also high and low electric alarm bells 36 and 37. A wire or lead 38 extends from the abutment contact 28 to the bell 36. A lead 39 connects the bell 36 and the battery 40, from which a wire 41 extends to the annunciator 35. A wire 42 connects the annunciator and the bell 37, which, in turn is connected to the abutment contact 27 by the lead 43. One of the ears of the arched strap has an extension 44 provided with a binding screw 45, by which a lead or wire 46 is connected to said extension 44. The wire or lead 46 is in turn connected at the junction 47 with the wire or lead 39. Should the temperature decrease below zero, say for instance, to forty degrees (at which point the abutment contact 27 is arranged) the cold contracts the spring, hence, will throw the pointer or indicator in contact with the abutment 27, thereby operating the annunciator and ringing the bell 37. Should the temperature increase, and the abutment 28 is set at a hundred and twenty degrees above zero, the action of the heat on the spring will move the indicator or pointer to contact with

the abutment 28, thereby operating the annunciator and ringing the bell 36.

The invention having been set forth, what is claimed as new and useful, is:—

The combination with a plate, of a pointer pivoted on the plate, said plate having an arcuate dial and an adjoining arcuate slot curved concentric with each other and concentric with the pivot of the pointer, and over which dial the pointer may sweep, the opposite edges of the arcuate slot having opposing registering arcuate scallops, abutment contacts in the slot, and between which said pointer is adapted to play, whereby it may engage either one of said contacts to close an electric circuit to actuate an annunciator and sound an alarm, each contact having a pair of extensions of different diameters, the one larger in diameter extending axially from the abutment and adapted to engage any two opposed scallops which are concentric with the extension of larger diameter, the extension of smaller diameter extending axially from the extension of larger diameter, and adapted, when the abutment is pulled outwardly to slide the length of the slot whereby the abutment may be adjusted at different locations, a nut threaded on the extension of smaller diameter for regulating tension of a spring to hold the larger extension in engagement with any two opposing scallops, and a coil spring surrounding the smaller extension and being interposed between the nut and the rear face of the plate to hold the larger extension in engagement with the scallops and adapted to be compressed when the abutment is pulled outwardly for its adjustment longitudinally of the slot.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LARS J. DAHL.
ALBERT E. ALLEN.

Witnesses:

OSCAR MICHELSON,
CHAS. EVERS.