Sept. 29, 1931. F. J. SCHOLTZ 1,824,933

THERMOSTATIC ALARM

Filed Aug. 27, 1929 2 Sheets-Sheet 1

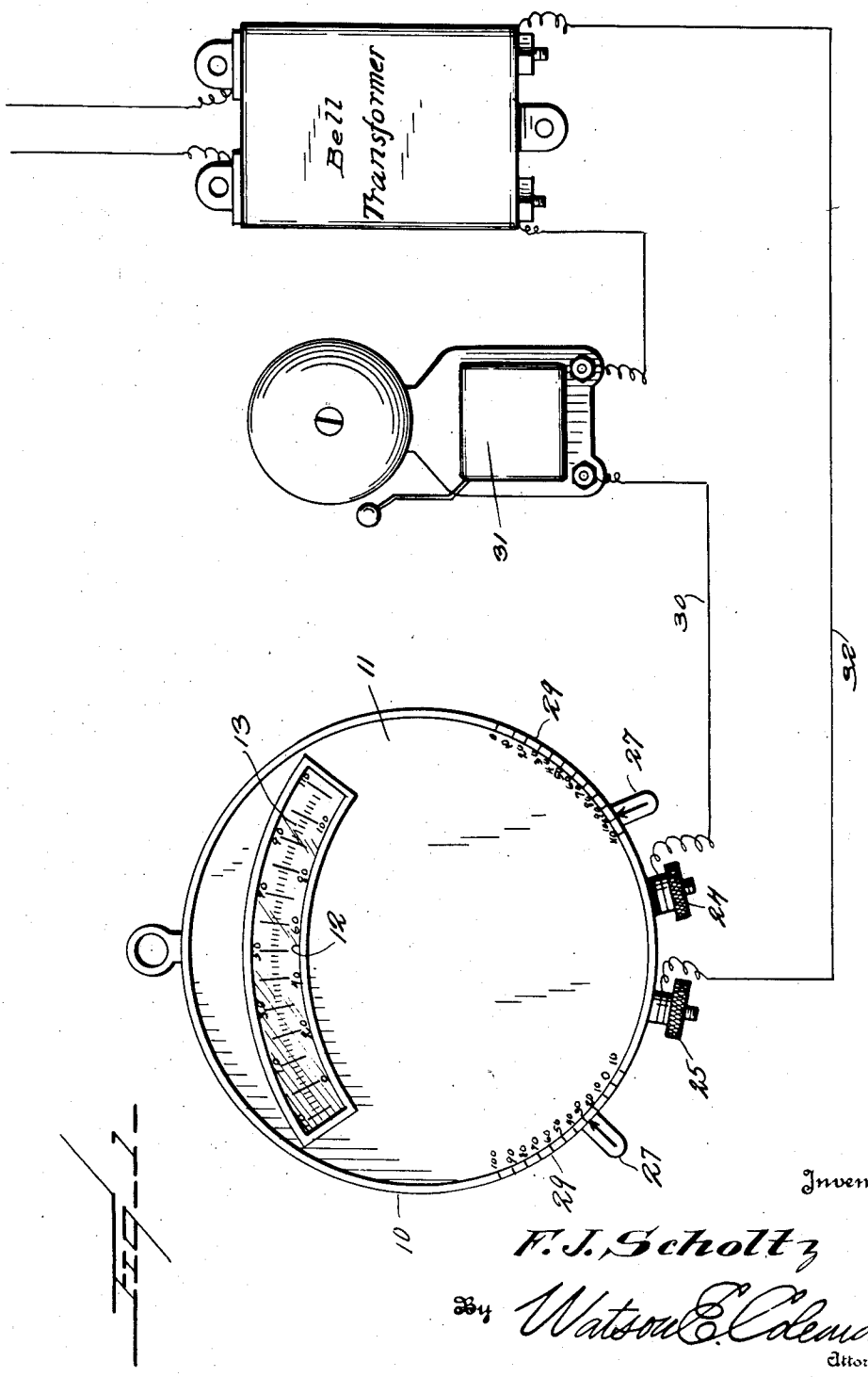


Fig. 1

Inventor

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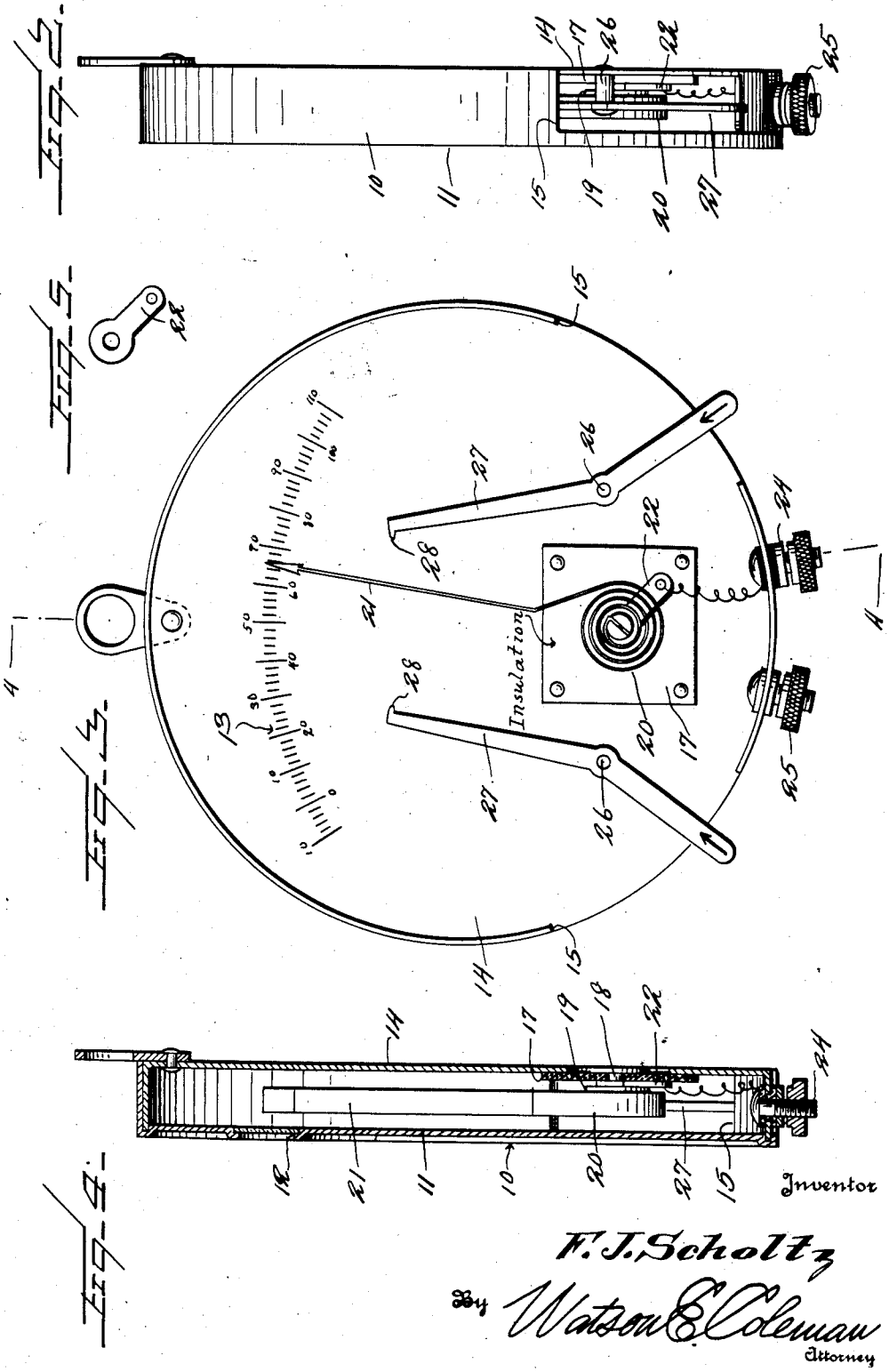
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UNITED STATES PATENT OFFICE

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THERMOSTATIC ALARM

Application filed August 27, 1929. Serial No. 388,791.

This invention relates to thermostatically actuated devices for sounding an alarm or giving a signal of any other character in case the temperature of a particular object or at a particular point, rises above or sinks below a certain degree and the general object of the invention is to provide a simple, readily adjusted device of this character which will not be liable to get out of order and which will indicate the maximum or minimum temperature to which the alarm has been set.

A further object is to provide a device of this character which is very simply constructed and which includes a temperature controlled hand movable across a dial and two contacts movable in the direction of movement of the hand to bring them nearer to or further from the hand, these contacts being within the casing enclosing the thermostat and moving over graduations which are corelated with the thermometric graduations on the dial.

Other objects are to eliminate the possibility of the indicator or hand becoming loose on its stud or shaft and the corrosion or rusting or the collection of dust around said shaft or to eliminate the possibility of the adjusting nut becoming loose, thus causing inaccuracy in adjusting the temperature.

Another object is to provide pivoted contacts disposed in the path of movement of the indicator hand, these contacts being connected in circuit with the alarm by wires leading from the pivot points of the contacts, thus preventing any possibility of the wires becoming broken through more or less constant adjustment.

Another object is to provide a construction which eliminates the necessity of removing any part of the cover or casing of the device in order to adjust the contacts.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a front elevation of a thermostatic alarm constructed in accordance with my invention and shown in use with a transformer and a signal;

Figure 2 is a side elevation of the thermostatic alarm;

Figure 3 is a face view of the alarm with the outer cover removed;

Figure 4 is a section on the line 4—4 of Figure 3;

Figure 5 is a detailed view of the connecting member 22.

Referring to the drawings, 10 designates the peripheral casing of temperature controlled element constituting in effect a thermometer, this casing being formed with an outer face 11 having a slot 12 through which the graduations 13 on a dial back of the outer face may be read, these graduations being shown as Fahrenheit graduations.

The casing is preferably formed in two sections, the back section being designated 14. The peripheral walls of these two sections are formed with slots 15 for purposes to be later stated.

Riveted or otherwise attached to the back wall 14 of the casing is a plate 17 of fibre or other insulating composition having a central opening. Extending through this opening is the shank of a rivet 18, this rivet having a flange 19 so that this fibre plate 17 is embraced between the flange and the head of the rivet. The rivet has attached to it the coiled portion 20 of a temperature controlled or thermo-operated element 21 constituting a hand or pointer which moves over the graduations 13 and which is observable through the glass pane disposed within the slot or opening 12. This thermometric element is formed of a leaf spring and the expansion and contraction of this temperature controlled element operates to shift the hand from one end of the scale or graduations 13 to the other end thereof. The rivet is tubular and having engagement with this tubular rivet by a screw is a lug 22 projecting radially outward and connected by a wire 23 to a binding post 24 in the peripheral wall of the casing. Disposed through the peripheral wall of the casing, which casing is of metal, is a binding post 25.

Pivotally mounted by means of rivets 26 to the back section 14 are metallic arms 27, these arms being alike, the outer ends of the

arms extending outward through the slots 15, while the inner ends of the arms form contacts 28 disposed in the path of movement of the spring 21. These arms may have frictional contact with the walls of the slots 15 or be otherwise formed so that the arms can be shifted in one direction or the other and will hold firmly in their shifted positions.

The front of the casing is provided on each side of the middle with a graduated scale 29 graduated in degrees and correlated with the graduations 13, these contact arms being adjustable in accordance with these scales 29. For instance when a contact arm is moved so that it is opposite the graduations indicating ten degrees on the scale 29, the arm will have its contact 28 shifted over to a point where a rise of ten degrees in temperature will cause the spring pointer 21 to contact with the arm and sound the signal or the arm might be shifted to a point where it may require a movement of the spring pointer 21 to 110 degrees on scale 13 before this change is made.

As shown in Figure 1, the binding post 24 is connected by a conductor 30 to a signal 31 and thence to a source of current while the binding post 25 is connected by a conductor 32 to the source of current. These wires may pass through a transformer if, for instance, one hundred and ten volt A. C. current is to be used in this signal circuit or the current may be secured from a battery, in which case, of course, no transformer is necessary.

Obviously minor details might be changed without departing from the spirit of the invention, but I regard the particular mounting of the spring pointer 21 as being of importance.

It will be noted that the arms 27 are each grounded by the rivet 26 which grounds this arm to the metallic casing, thus forming a connection to the return wire connected to binding post 25. It will thus be seen that movement of either one of these arms 27 will not in any way affect any wiring and will not tend to break or bend any wires. By this means also, I practically do away with all interior wiring except the wire 23 which does not move and is, therefore, not liable to become detached or break.

I claim:—

In a thermostatic alarm of the character described, a casing having a metallic section, an insulating base mounted upon the metallic section, a rivet passing through said insulating base, a thermometric element in the form of a spring having one end coiled and engaged with said rivet, the other end formed to provide a pointer, the case having a graduated scale over which the pointer moves, a lug carried by the rivet, binding post mounted upon the casing and insulated therefrom to which said lug is electrically connected and contact arms each pivoted to a metallic portion of the case, the inner ends of the contact arms being disposed in the path of movement of said pointer, the case having slots through which the outer ends of the arms project and the case having graduations associated with each of said arms whereby to indicate the positions to which the arms are adjusted, a binding post mounted upon the case, the pivots to said arms being connected to the binding posts, said binding posts being adapted to be connected in a circuit with an alarm and a source of current.

In testimony whereof I hereunto affix my signature.

FERDINAND J. SCHOLTZ.