

No. 625,843.

Patented May 30, 1899.

H. F. JONES.
ELECTRIC HEAT ALARM.

(Application filed July 29, 1898.)

(No Model.)

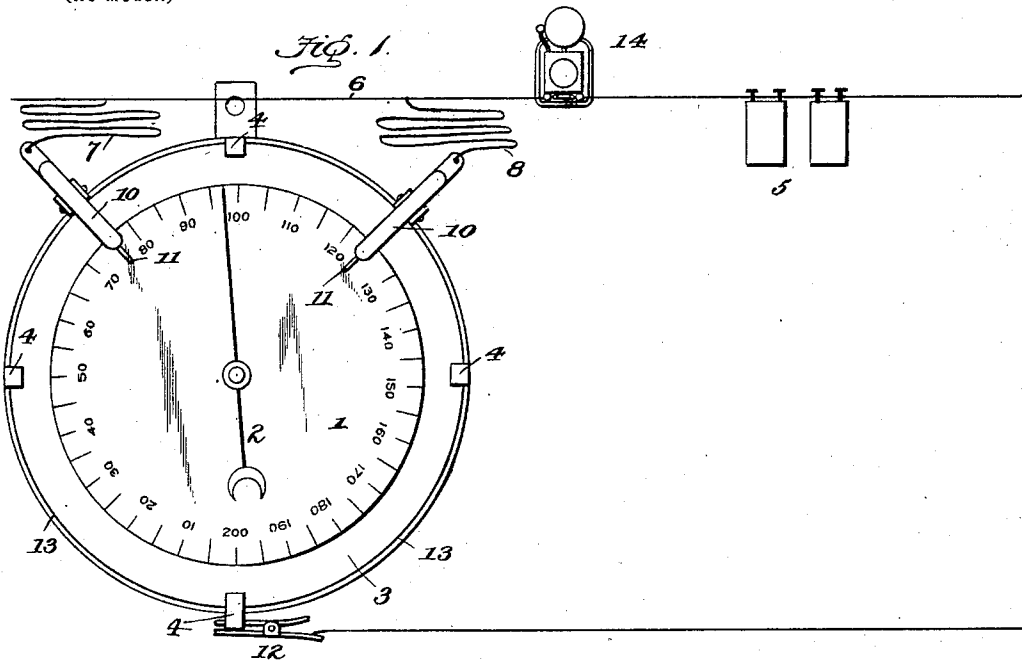


Fig. 2.

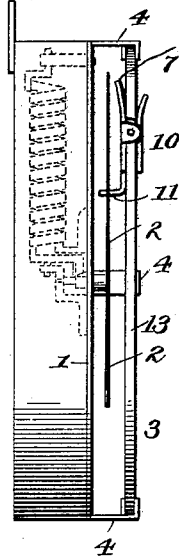


Fig. 3.

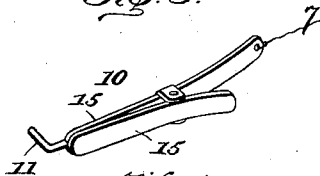


Fig. 4.

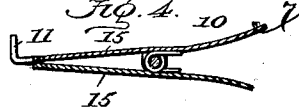
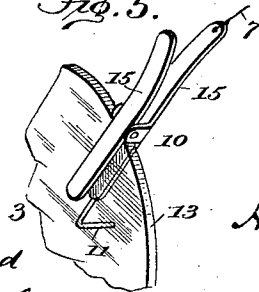


Fig. 5.



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ELECTRIC HEAT-ALARM.

SPECIFICATION forming part of Letters Patent No. 625,843, dated May 30, 1899.

Application filed July 29, 1898. Serial No. 687,192. (No model.)

To all whom it may concern:

Be it known that I, HOWARD FEILD JONES, a citizen of the United States, residing at Wilson, in the county of Wilson and State of North Carolina, have invented a new and useful Improvement in Electric Heat-Alarms, of which the following is a specification.

I have provided a heat-alarm attachment to the well-known "Standard Metallic Thermometer" for use in tobacco-barns to warn the attendant of injurious changes in the temperature in curing tobacco in the leaf, and for this purpose my improvement is directed to a simple form of an electrically-actuated bell attachment to the temperature-coil whereby an alarm will be made should the curing heat become too high or too low. The greatest care and attention are required in the curing of tobacco lest it be "scalded" by the heat running up beyond the proper degree or the leaf caused to "run" by the return of the sap into the leaf from the stem and "splotch" the leaf when the temperature has fallen too low. From these causes a barn of fine tobacco may be spoiled in a short time. A good curer will know what heat the particular kind of leaf will bear in curing it and especially in the early stages of the cure. The general practice of curing tobacco in the barn requires an attendant for each barn, and he must enter the barn at all hours and frequently to examine the thermometer, to attend the fires, and to observe the condition of the tobacco. Should he fall asleep from exhaustion, or fail to observe the condition of the tobacco, or make a mistake in observing and regulating the temperature, the consequences would probably be the loss of the whole cure. By using the heat-alarm which I have provided one man can attend to several barns in which tobacco is being cured. His labor is greatly reduced. He can get rest and sleep. He is not required to go into the hot barn except when he has warning of such necessity, and this warning renders it certain to keep the attendant timely advised that the heat is either too high or too low. It is important that the time of warning can be set to suit the different conditions of the cure. The alarm attachment can be easily and quickly set at the points beyond which the

temperature is not wanted to vary, as experience may determine with a particular kind of leaf, or the duration under which the tobacco has been undergoing cure.

In the accompanying drawings the heat-alarm attachment is shown as applied to the circumferential edge of the plate of glass by means of metallic spring-clips in direct electrical connection with a bell, and such plate supplements the dial to form a free seatway at any point around the dial for the attachment of the clip connections.

In the drawings, Figure 1 is a front view of a thermometer heat-alarm embracing my improvement. Fig. 2 is a side view of the same; and Figs. 3 and 4 show one of the spring-clips with its contact-point, Fig. 5 showing the same contact and conducting-clip as applied to the edge of the glass plate.

The precise improvement as illustrated will be specifically pointed out in the claims concluding this specification.

A very cheap way of producing the instrument is to take the temperature-coil from the thermometer now in general use, known as the "Standard Metallic Thermometer," and fasten the coil to a dial 1, graduated from zero to 200°, and fasten the needle or dial-hand 2 to the coil, so that the needle will be caused to sweep the arc of the dial graduations by the action of the coil.

The temperature-coil, which is seen in dotted lines in Fig. 2, may or may not be inclosed in a case; but a suitable backing should be provided by which to hang the instrument in the desired position in the barn.

The needle or dial-hand is tipped with platinum for the purpose of making electrical contact.

As seen in Figs. 1 and 2, a strong glass plate 3 of good quality is mounted or seated in front of and away from the dial upon four (more or less) studs or hangers 4, fixed to the case or frame and applied to the circumferential edge of said plate, for a purpose which I will presently state.

From a galvanic battery 5 an insulated wire 6 extends to the thermometer, and this wire has two insulated flexible branches 7 and 8, each of which is provided with a spring clip or clamp adapted to be firmly clamped to the

edge of the glass plate 3 and have each a contact-point 11, standing on the inner side of the plate in the path of the needle or dial-hand. The third spring-clip 12 connects the dial-hand and battery by a separate wire and is adapted to be clamped to a projecting part of the case or to one of the studs 4, which support the glass plate. Mounted in this way the glass plate has a free edge 13 all around it, which gives convenience for slipping on and clamping thereto at any point between the studs the spring-clips, and for this purpose two of the flexible conducting branches 7 and 8 must be long enough to make the attachment of the clips to any point in the circumference of the plate to which it is desired that the dial-hand shall make contact with the clips, and thereby connect them in the circuit.

To complete the circuit, the spring-clip 12 is for convenience attached to a supporting-stud of the glass plate to make the dial-hand the other pole of the battery through the coil. The contact-points of the spring-clips are of platinum and stand so as to be within the arc described by the point of the dial-hand. As, therefore, the temperature causes the hand or needle to move along its arc, it must engage one of the clip contact-points, if moved through a sufficient arc, and make the electrical contact, and thereby ring the bell 14, which is in the circuit; but until such contact is made the circuit is not complete and there can be no alarm. As the spring-clips are clamped to the edge of the plate on opposite sides of the dial-hand, the contact is made with either clip, according as the temperature may rise or fall, and under either condition ring the bell to give the notice of too great or too low temperature.

The needle or hand is in continuous electrical connection through the fixed spring-

clip 12 and the coil, while the other two spring-clips 10, having contact-points, are put in electrical circuit, the one to indicate too great heat and the other to indicate too little heat.

The seating edge of the glass for the clips I prefer to make circular; but it may be made many-sided so long as it affords a free way upon which to slip on the clamps of the circuit-making clips as a means of sounding an alarm when the dial-hand comes in contact with the clips.

The clips may be of any construction that will provide a firm clamp and a contact-point; but a simple form of metal clamp composed of two spring-plates 15, one of which has the contact-point, will be found to answer the purpose, the plate having the contact-point also having the battery connection.

I claim as my improvement—

1. The combination with a dial-thermometer and its indicating needle or hand, of a glass plate forming a continuous free circumferential edge, metal spring-clips each connected to the battery-wire and having a contact-point and adapted to be slipped over and clamped upon the free edge of the glass plate to support the contact-points in the path of the dial-hand and a spring-clip having electrical connection with the dial-hand.

2. In a dial-thermometer, and in combination with the dial and its indicating-hand, a glass plate supplementing and separated from and independent of the dial, and supported by metallic studs, and metal spring-clips, two of which are clamped upon the edge of the glass plate and having contact-points, and a third clip clamped in electrical connection with the dial-hand, substantially as described.

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Witnesses:

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