(No Model.)

J. BARRY.

THERMOMETRIC ELECTRIC ALARM.

No. 329,698. Patented Nov. 3, 1885.

Fig. 1.

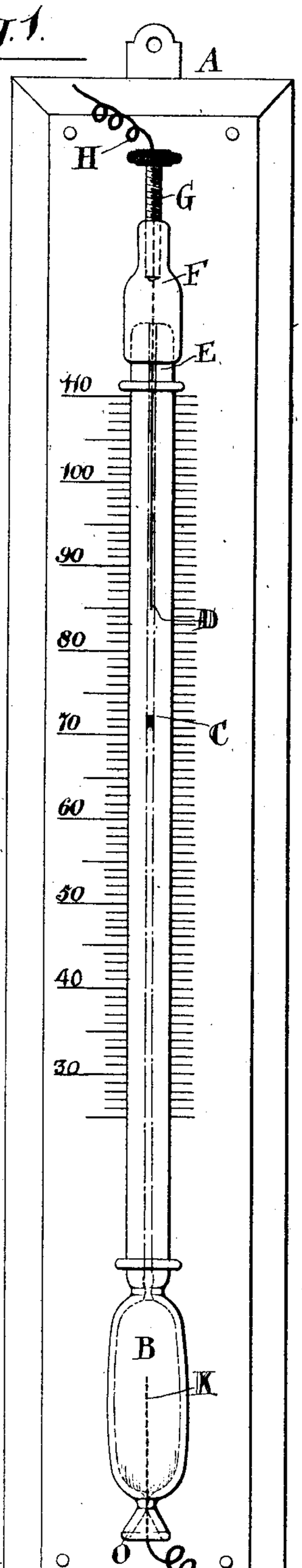


Fig. 3.

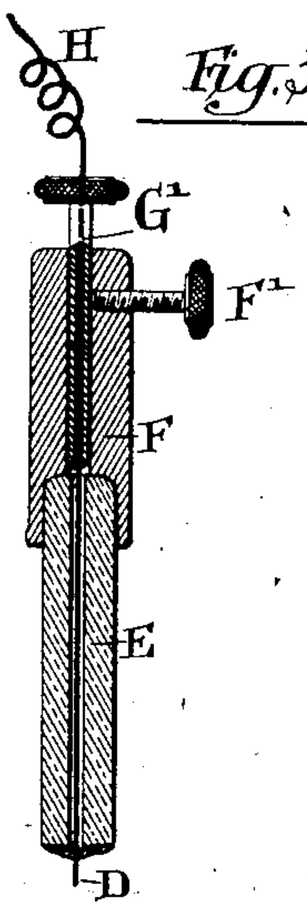


Fig. 4

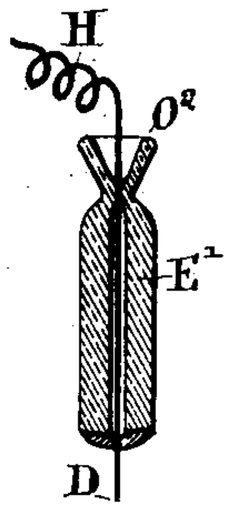


Fig. 5.

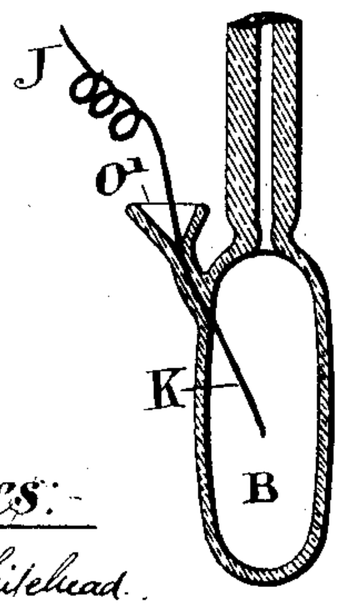
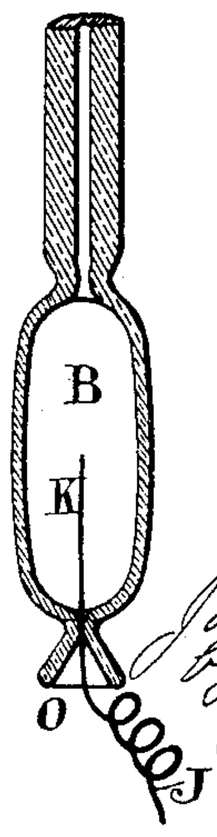


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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THERMOMETRIC ELECTRIC ALARM.

SPECIFICATION forming part of Letters Patent No. 329,698, dated November 3, 1885.

Application filed June 16, 1884. Serial No. 134,978. (No model.)

To all whom it may concern:

Be it known that I, JOHN BARRY, a citizen of the United States, and a resident of the city and county of New York, and State of New York, have invented a new and useful Improvement in Thermometric Electric Alarms, of which the following is a specification, reference being had to the accompanying drawings.

The improvement consists in the means of preventing the accidental breakage of the conducting-wire at the point of its hermetically-closed entrance to the glass tube of the thermometer, as hereinafter described and claimed.

Figure 1 is a front view of a thermometer having my invention applied at the bulb. Fig. 2 is a vertical section of the bulb and lower end of the tube, illustrating my invention. Fig. 3 is a vertical section exhibiting a modification of the wire connection at the upper part of the tube. Fig. 4 is a vertical section illustrating the application of my invention at the upper end of the tube. Fig. 5 is a vertical section of the lower end of the tube, illustrating a modification of the wire connection with the bulb.

Similar letters of reference indicate corresponding parts in the several figures.

B is the bulb, and E is the stem, of the thermometer-tube.

A is the board on which the graduated scale is inscribed. This scale may be engraved on the tube itself.

D H is the terminal wire of the electric circuit, which enters the tube at the upper end.

J K is the terminal wire which enters the bulb.

In Fig. 1 the upper wire passes through and is attached to an adjusting-screw, G, which is screwed into a metal cap, F, on the top of the tube. In Fig. 2 the same wire passes through and is attached to a plain stem inserted to slide through a cap, F, on the tube and secured by a set-screw. These methods of attaching the upper wire constitute no part of the present invention, but are only shown to explain how provision is made for adjusting the upper terminal wire to close the circuit at different temperatures, in which case my invention, which is illustrated particularly by Figs. 2, 4, and 5, is not conveniently applicable to the upper end of the tube, as shown in Fig. 4, but is only applied to the lower end, as shown in Figs. 2 and 5.

My invention is indicated at O in Figs. 1 and 2, at O′, in Fig. 5, and at O^2 in Fig. 4, at which points it will be seen that the glass is formed into a small conical or funnel-like shield outside of where the wire enters the bulb or tube, and is hermetically sealed into the glass by the fusion of the latter around it. This funnel-like shield or projection integral with the tube and surrounding the wire is finished with a rounded edge, as shown in Figs. 1, 2, 3, and 5, such edge being produced by the fusion of the glass when the end or surplus has been trimmed off, and the said funnel-like shield with the rounded edge prevents the breakage of the wire, which is otherwise apt to occur in the fitting up of the thermometer. This fitting up involves much handling and manipulation after the wire has been inserted through and sealed in the tube. In the first place the manufacturer puts into a tube a quantity of mercury that is approximately correct, and afterward has to add or take away, perhaps several times, to make it agree with a standard scale. The tube is then applied to the plate upon which the scale is to be inscribed and the plate pointed for the scale. During these operations the wire, which is very delicate, is very liable, without this rounded-edged conical shield, to be snapped off short by repeated bending abruptly over the sharp surrounding external edge of the glass; but the shield prevents any such abrupt bending, and there is no liability to break the wire.

What I claim as my invention, and desire to secure by Letters Patent, is—

An electric thermometer-tube provided where the electric conducting-wire passes through, and is hermetically sealed within it, with an integral funnel-shaped or outwardly-flaring external shield surrounding the said wire and having a rounded outer edge, substantially as and for the purpose herein described.

JOHN BARRY.

Witnesses:
FREDK. HAYNES,
LOUIS M. F. WHITEHEAD.