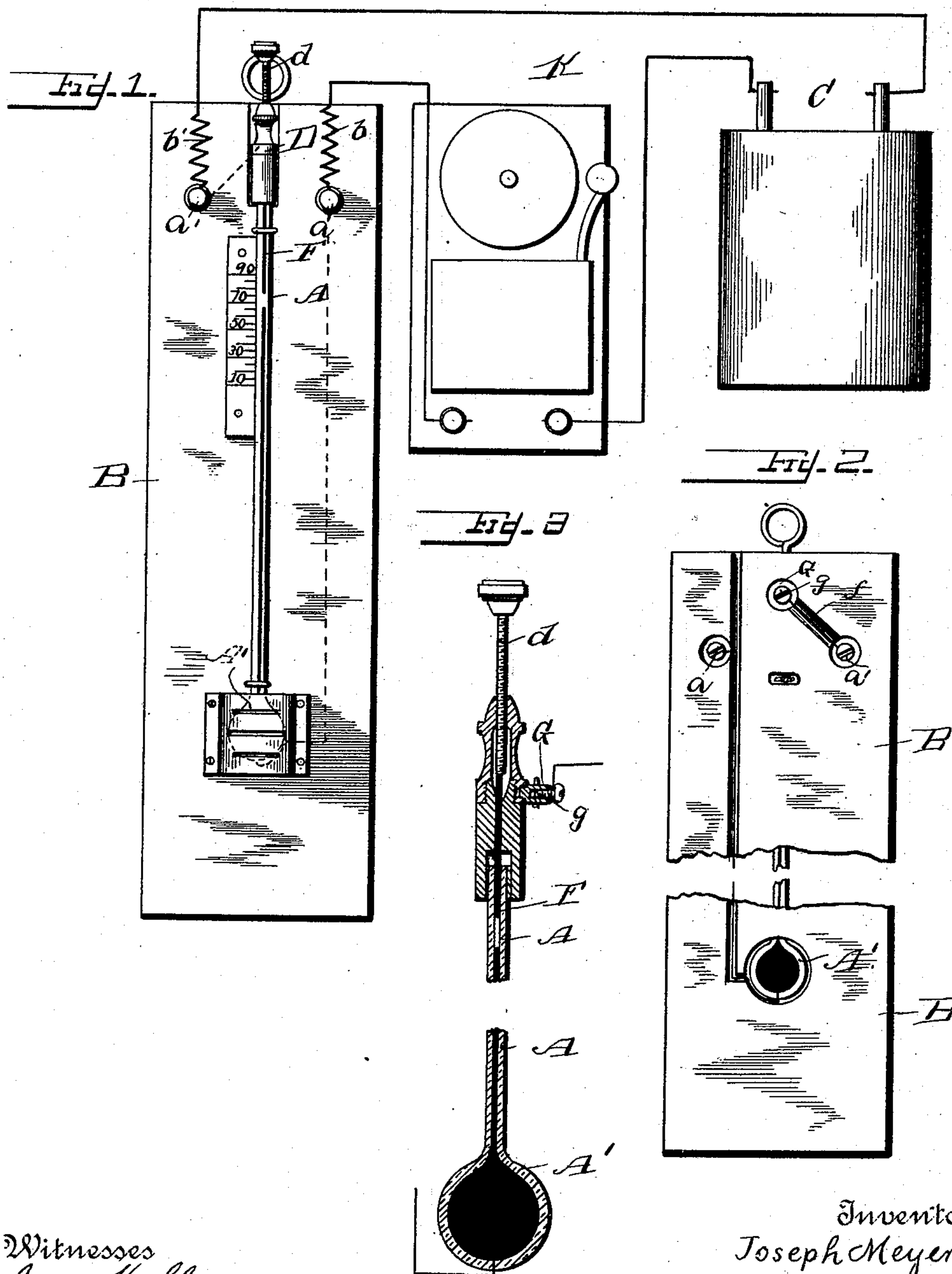


(No Model.)

J. MEYER.  
ELECTRIC HEAT ALARM.

No. 474,673.

Patented May 10, 1892.



Witnesses  
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Philip C. Masi.

Inventor  
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# UNITED STATES PATENT OFFICE.

JOSEPH MEYER, OF JERSEY CITY, NEW JERSEY.

## ELECTRIC HEAT-ALARM.

SPECIFICATION forming part of Letters Patent No. 474,673, dated May 10, 1892.

Application filed December 14, 1891. Serial No. 415,046. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH MEYER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Electric Heat-Regulators and Fire-Alarms; and I do 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a diagrammatic view illustrating the invention and its battery and alarm connections. Fig. 2 is a rear view, and Fig. 3 is a vertical section.

This invention has relation to an automatic electrically-operated heat-regulator and fire-alarm; and it consists in the novel construction and combination of parts, as hereinafter specified.

It consists more particularly in the employment of a column of mercury, which by its expansion above a certain point completes an electrical circuit, and by means of an alarm, forming a part of such circuit, indicates that the temperature of the apartment or building in which it is placed has been raised to an undue degree.

The device may be arranged for use as a fire-alarm only or for the purpose of notifying the party in charge of the heating apparatus that the temperature of the room or apartment, or of any particular room or apartment, has become raised beyond the point at which it is normally kept, and thereby obviating the necessity of constant inspection or notification by the occupant that the heat has become excessive.

In the accompanying drawings, the letter A designates a glass tube supported in vertical position and terminating at its lower end in a bulb A', which is charged with an expansible liquid, preferably mercury, the whole being similar to the bulb and tube employed in ordinary thermometers. Upon the support B for the bulb and tube at any convenient point are two binding-posts *a a'*, to which are connected wires *b b'* from the opposite poles of a battery. (Shown at C.) The post *a* also has

an electric connection with the mercury (or other liquid) in the lower portion of the bulb A'. The upper end of the tube is provided with a cap D, into which extends an adjustable screw *d*, carrying at its lower end a fine piece of metal or needle F, which projects into the upper portion of the tube. I usually form this needle of platinum; but other metal may be employed. Said needle is electrically connected with the binding-post *a'* by any suitable conductor—such as the insulated wire *f* and the metal forming the cap. In the drawings I have shown the cap as formed in two sections, having a screw-thread connection one with the other, the upper section having an apertured lug G, in which is placed a screw *g*, to which the wire *f* is connected and through which the connection is made.

Introduced in the circuit and forming a part thereof is an ordinary electric bell K, or other suitable alarm. It will therefore be seen that when the temperature of the room or apartment in which the device is placed becomes raised to such a degree that the column of mercury in the tube is brought in contact with the needle F the circuit is completed and the alarm is continuously sounded until the temperature is again lowered or the circuit is broken by a switch for the purpose. The screw *d* being adjustable in the cap of the tube, the position of the needle F may be regulated so that the contact will be effected at any desired temperature.

Having described this invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The heat-regulator and fire-alarm, comprising a thermostatic tube and bulb charged with mercury, forming the terminal of one pole of a battery, the cap D on the other end of said tube, an adjusting-screw *d*, projecting into said cap and carrying a needle at its lower end, extending into said tube, said cap being formed in two sections, having a screw-threaded connection, one of said sections having an apertured lug G, in which is a binding-screw *g*, electrically connected with the other pole of the battery and with said needle, and the alarm forming part of the circuit, substantially as specified.

2. In a thermostatic alarm, the support B, having therein a thermometric tube and bulb

charged with mercury, the binding-posts *aa'* on said support, said posts being electrically connected with opposite poles of a battery, an electrical connection between one of said  
5 posts and the mercury, a cap on the upper end of said tube having therein an adjusting-screw carrying a needle depending into the tube, and an apertured lug on said cap having a binding-screw therein electrically con-

nected with said needle and with the opposite pole of the battery, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH MEYER.

Witnesses:

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