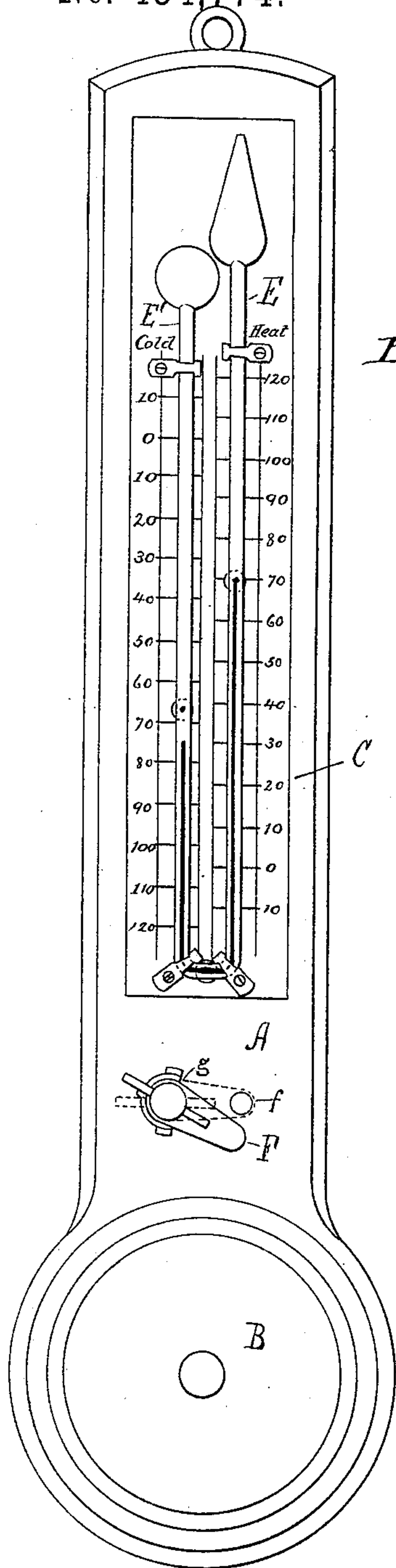


(No Model.)

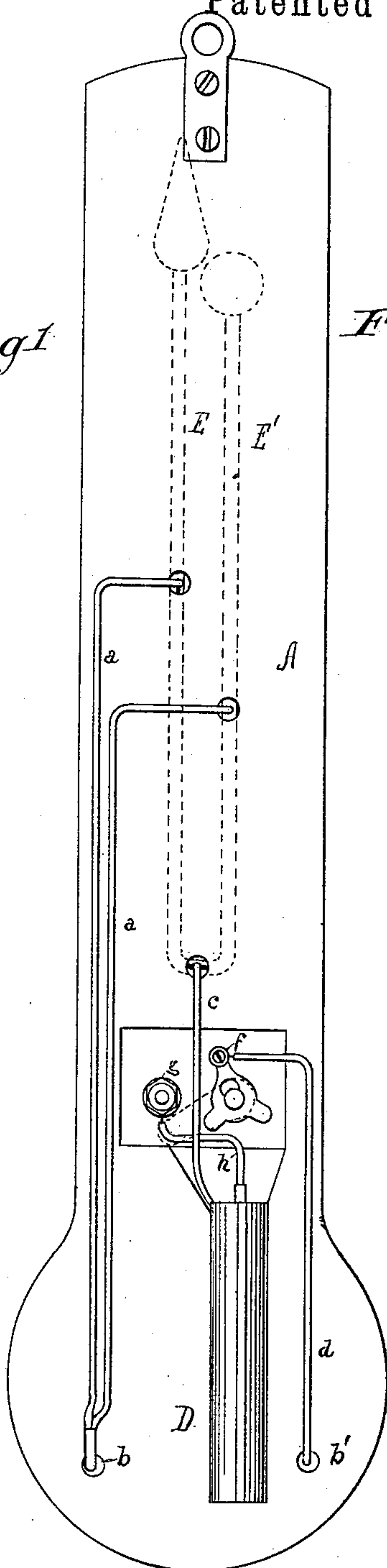
E. M. FOX.  
THERMOMETER.

No. 434,774.

Patented Aug. 19, 1890.



*Fig. 1*



*Fig. 2*

*Attest*  
*Chas. Benjamin*  
*Philip Hathaway.*

*Inventor:*  
*Edwin M. Fox*  
*by W. P. Presley Jr*  
*his attorney.*

# UNITED STATES PATENT OFFICE.

EDWIN M. FOX, OF BROOKLYN, ASSIGNOR TO PHILIP HATHAWAY, OF  
NEW YORK, N. Y.

## THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 434,774, dated August 19, 1890.

Application filed April 3, 1890. Serial No. 346,401. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN M. FOX, a citizen of the United States, and a resident of Brooklyn, Kings county, New York, have invented a certain new and useful Improvement in Thermometers, (for which I have applied for Letters Patent in Great Britain April 8, 1890, No. 5,353, and in France April 12, 1890, the number of which has not been assigned,) of which the following is a specification.

The object of my invention is to provide a device which shall not only indicate to the eye the temperature of the surrounding medium, as is done by any other thermometer, but shall also give a similar indication to the ear whenever a desired limit of heat or cold is reached. To accomplish this result I use, in addition to an ordinary mercury or aneroid thermometer, an electric alarm operating in connection therewith and mounted upon the same base or so closely associated with it that the combination of parts becomes a single light, portable, and attractive article of manufacture.

My invention consists, therefore, in an alarm-thermometer as a new article of manufacture, which consists of an alarm-bell, a battery, and an ordinary thermometer, all mounted on the same base, and line-wires connecting said battery, said bell, and said ordinary thermometer in an electric circuit.

One form of my invention, wherein the ordinary thermometer employed is a two-legged mercury thermometer, is shown in the accompanying drawings, in which—

Figure 1 is a front elevation, and Fig. 2 is a back view.

The same letters indicate similar parts in both figures.

A is the base-board, upon which all the parts are mounted or to which they are secured.

B is an alarm-bell of ordinary construction, preferably placed in an enlargement of the base-board below the thermometer C. This bell is provided with the ordinary binding-post, hammer, and electro-magnet. (Not shown.)

A small dry battery D is inserted in or attached to the base-board at any desired point, but preferably in a slot cut for that purpose

in the back of the base-board behind the bell, as there it can be stowed out of sight, so as to take up less room than elsewhere. The mercury thermometer C, with the two legs E and E', is sunk into the base-board, so that the front of the face-plate shall be flush with the front of the base-board, which is pierced at the point 65 on the cold-column E' as the lower limit of temperature, and at the point 70 on the heat-column E as the upper limit of temperature. Both of these points are connected by the wires *a* on the back of the base-board with a single binding-post *b* of the bell B. The mercury column is also pierced at the bottom, where the two legs unite by a wire *c*, which leads to one pole of the battery D.

Although not necessary for the operation of the thermometer, a switch F is provided, through which the circuit passes to ring the alarm as a useful device for preventing the battery from running down, as an attendant, as soon as the alarm is sounded, can, by turning the switch F from the position shown in the dotted lines in Fig. 1 to the position shown in full lines in Fig. 1, open the circuit, thus saving the battery and stopping the alarm. Of course the switch is to be returned to its normal position—that of the dotted lines in Fig. 1—as soon as the temperature has been restored to its normal height. When a switch is employed, the line-wire *d* from the second binding-post of the bell B leads to pin *f*, and making a circuit through the switch to the pivot *g*, upon which the switch turns, is connected by the line-wire *h* to the other pole of the battery D. Of course when the thermometer is built without a switch the line-wire leads directly from the binding-post *b* to the battery D. The circuit is normally open, and is closed either by the column of mercury E rising to 70°, or by the column in tube E' rising to 65°, and thus for all temperatures between 65° and 70° Fahrenheit no alarm is given. For temperatures outside that range a constant alarm would be given if the circuit is not broken at the switch, as described.

I am aware that thermometers have been previously used electrically connected with an alarm, where the alarm and battery were



situated at a distance from the thermometer or did not form a part of the structure itself, and therefore I do not claim such constructions; but

5 What I do claim is—

As a new article of manufacture, an electric-alarm thermometer, which consists of a suitable base-board provided with an enlarged lower portion, an alarm-bell mounted upon  
10 said enlarged portion of said base-board, a mercury thermometer mounted upon the narrow portion of said base-board above said alarm-bell, a dry battery concealed in said

base-board behind the bell in a slot provided for that purpose, line-wires attached to said 15 base-board and connecting said bell, battery and electric thermometer in an electric circuit, and an independent switch mounted upon said base-board and adapted to open or close said circuit, and thus allow or prevent 20 an alarm being given when the mercury column in the thermometer completes the circuit.

EDWIN M. FOX.

Witnesses:

PHILIP HATHAWAY,  
J. C. PATTERSON.