

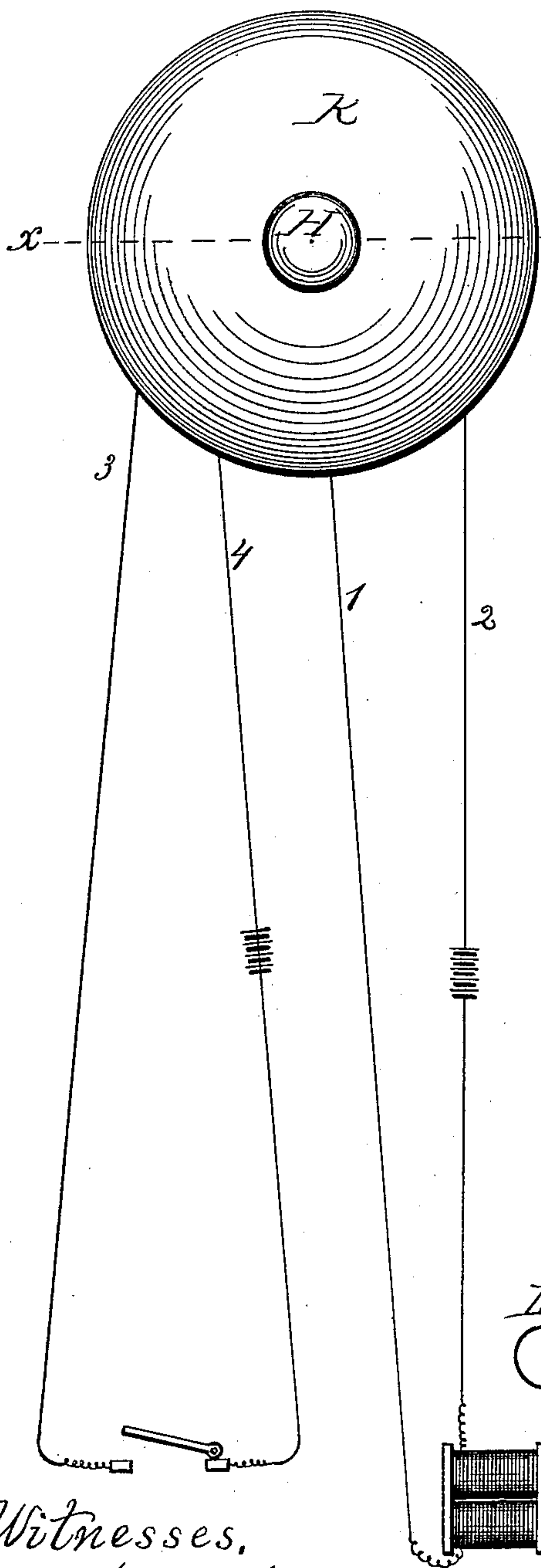
(No Model.)

O. F. WOODWARD.  
ELECTRIC THERMOSTAT AND PUSH BUTTON.

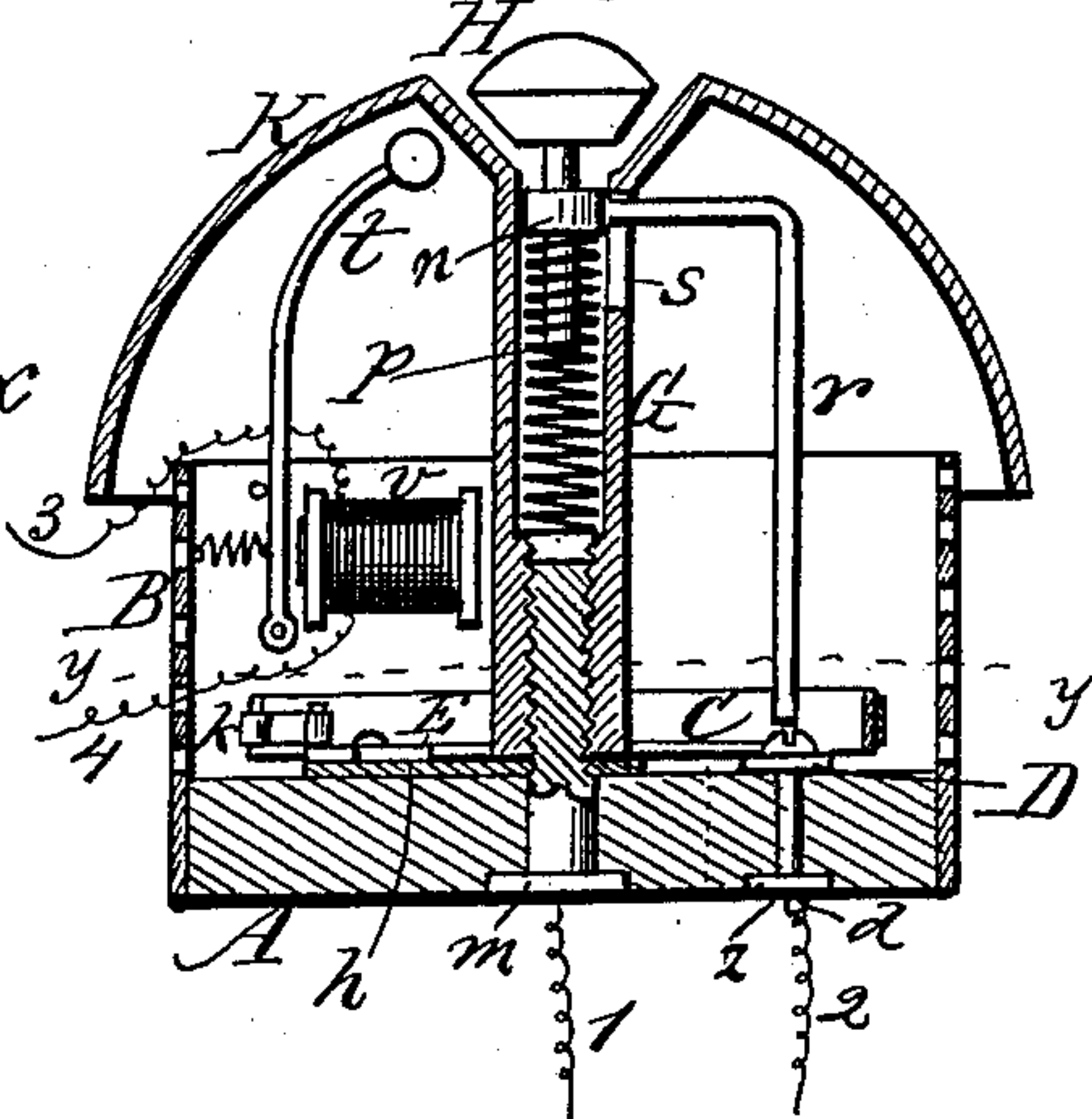
No. 552,166.

Patented Dec. 31, 1895.

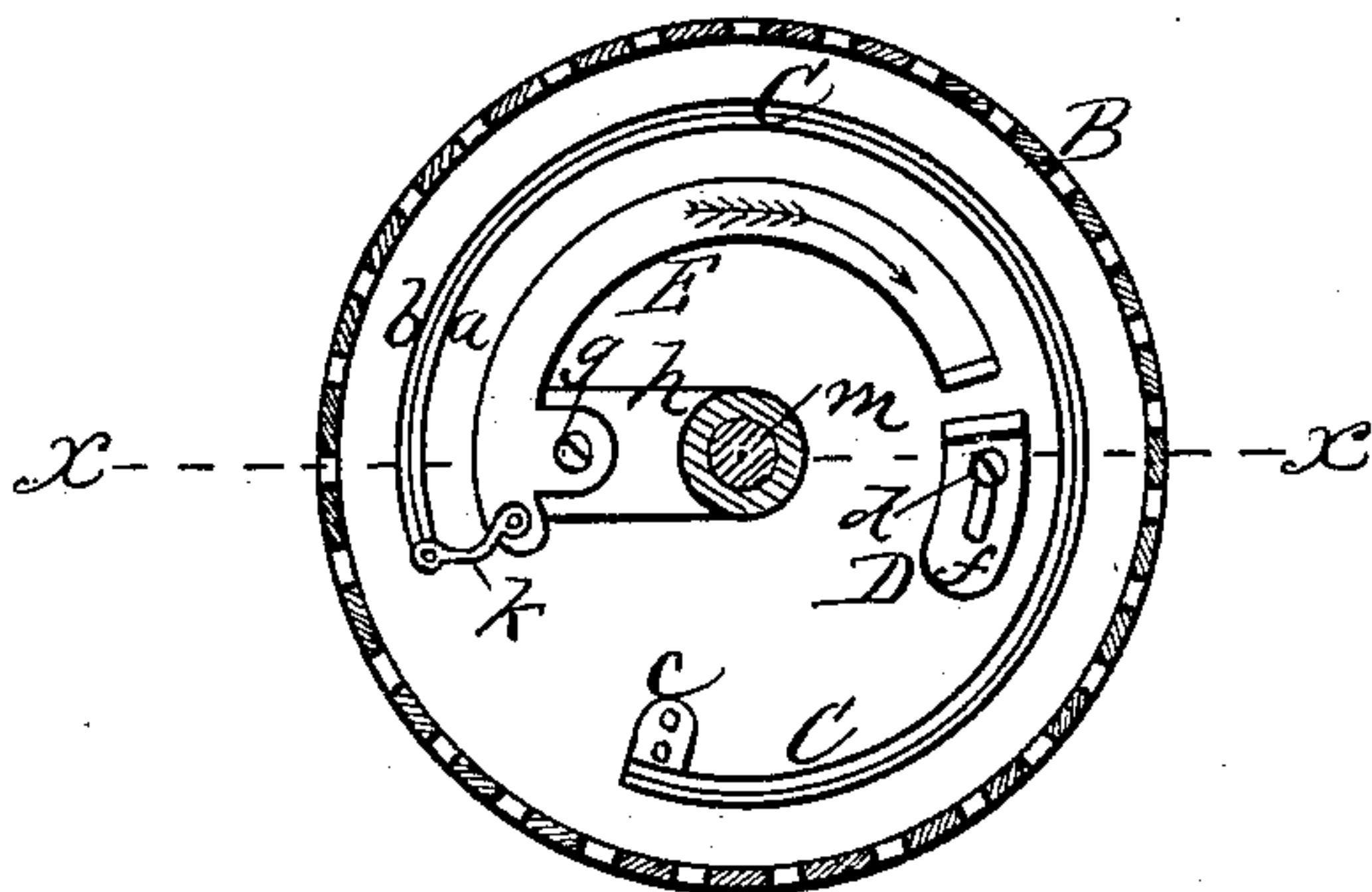
*Fig. 1.*



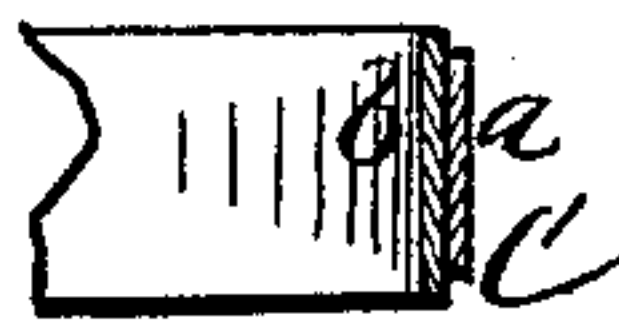
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## ELECTRIC THERMOSTAT AND PUSH-BUTTON.

SPECIFICATION forming part of Letters Patent No. 552,166, dated December 31, 1895.

Application filed December 29, 1893. Serial No. 495,048. (No model.)

*To all whom it may concern:*

Be it known that I, ORATOR F. WOODWARD, of Le Roy, in the county of Genesee and State of New York, have invented a certain new and  
5 useful Improvement in Electric Thermostats and Push-Buttons; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.  
10 The design of my improvement is to combine in a single instrument an electric push-button and thermostat, and in some instances a call-bell; and the invention consists in the construction and arrangement hereinafter de-  
15 scribed, and embraced in the claims.

In the drawings, Figure 1 is a face view of the device. Fig. 2 is a cross-section in line *xx* of Figs. 1 and 3. Fig. 3 is a section in line *yy* of Fig. 2. Fig. 4 is a cross-section of  
20 the expansible ring.

A indicates the base, which consists of a disk of some insulating material.

B is a perforated case which admits air to the interior. This case may or may not be  
25 used, as desired.

C is an expansible ring, made up of two separate strips *a b* attached together and capable of different degrees of expansibility under heat. When subjected to heat the tend-  
30 ency of the ring is to expand or straighten. One end of the ring is attached at *c* to the insulated base, while the opposite end is free to move out and in.

D is an electrode, consisting of a plate se-  
35 cured to the base by a screw *d* resting in a slot *f* of the plate, whereby the latter can be adjusted forward and back relatively to a pivoted bar E, which forms a conductor. By means of this adjustment the apparatus can  
40 be made to sound an alarm at any predetermined degree of heat. The bar E is pivoted at *g* to a conducting-plate *h*, and is connected with the free end of the expansible ring C by a link *k*, whereby, when the ring is expanded,  
45 the end of the conducting-bar E is brought in contact with the electrode D, thus completing the circuit. The conducting-plate *h* is connected with a screw *m*, attached to the base, and to the screw is attached the push-  
50 button, as will presently be described.

1 and 2 are two conducting-wires, one con-

nected with the screw *m* and provided with a battery or other source of electricity, the other connected with the electrode D by a rivet *z* and extending to an office or other  
55 place and connected with a bell L forming an annunciator, whereby an alarm may be sounded.

In case of fire at the locality where the instrument is placed the increase of heat ex-  
60 pands the ring C, turns the bar E till it comes in contact with the electrode D, and thereby forms a circuit through wire 2 to the annunciator L.

G is a hollow stem attached to the screw *m* 65 and extending upward. H is a push-button provided with a plug *n*, which plays up and down in the stem, being pressed upward by a spring *p*. The shank of the push-button is provided with an arm *r* that passes out  
70 through a slot *s* of the stem, its lower end resting over the electrode D, but removed therefrom. When the button is pushed down the end of the arm comes in contact with the  
75 electrode, thereby completing the circuit through wire 2 and sounding the call at annunciator L.

By combining the thermostat and push-button in one instrument, as described, it is in compact and convenient form and serves the  
80 purpose of two separate instruments. It is of special use in those locations where calls are necessary and where it is desired to guard against fire—for instance, in hotels.

In some cases a call-bell K may be used, at-  
85 tached to the instrument for the purpose of signaling from an office or other point to the location where the instrument is used. In such case it is attached so as to overcap the instrument, and is provided with a hammer *t* 90 and electromagnet *v*, as usual in this class of instruments, and is provided with separate electrical connections 3 and 4. It is of service in hotels and other places, and serves the  
95 threefold purpose of a thermostat, an annunciator and a call-bell.

In case the bell K is not used it is replaced by a cap of any suitable kind which covers the instrument and supports the push-button.

By use of the bar E, pivoted near the end 100 operated by the expansible ring, the opposite or free end has a long movement which ren-



ders it very sensitive to the action of heat and renders it capable of making a quick connection.

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

1. In an electric thermostat, the combination of a base with an expansible strip, a movable conducting bar, and an electrode, all supported on the said base in a plane parallel thereto, the said expansible strip and conducting bar being parallel to each other and connected at the free end of the former and the said electrode being arranged opposite the other end of the said bar for closing the circuit when the said strip expands substantially as set forth.

2. In an electric thermostat the combination of an expansible strip, with a movable conducting bar connected thereto and operated thereby, an electrode arranged for contact with the said bar when the latter is thus operated, means for adjusting the said electrode toward or from the said bar at will and a base on which the said bar and strip are supported in positions parallel to each other and in a plane parallel to the said base substantially as set forth.

3. The combination of the expansible ring

C, the pivoted conducting bar E, the link  $k$  connecting the free end of the expansible ring with the conducting bar, the adjustable electrode D, the electrical connections 1, 2, connected respectively with the conducting bar and electrode, the tube G, electrically connected with the bar E, and the push button H resting in said tube and provided with arm  $r$ , as shown and described and for the purpose specified.

4. The combination of the base A and tube B extending therefrom of a bell K attached to the tube and surmounting the base, the electro-magnet  $v$  for operating the hammer of the bell, the push button H movable up and down in the said tube and provided with an arm  $r$ , an electrode arranged for contact with the said arm and electrical connections making circuit through the said magnet when the said knob is depressed substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ORATOR F. WOODWARD.

Witnesses:

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JOHN R. OLMSTED.