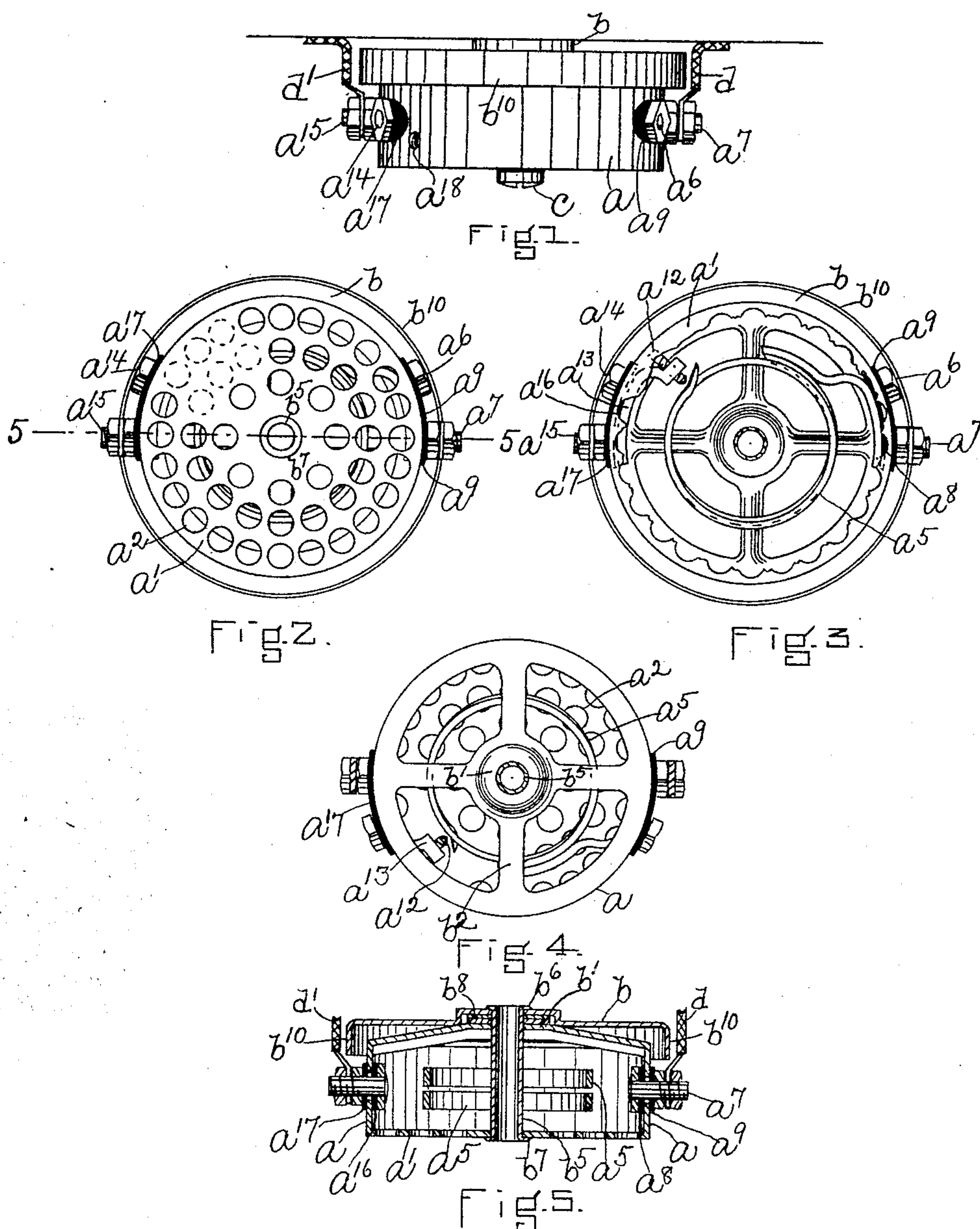


(No Model.)

C. BURGHER.
THERMOSTAT.

No. 573,134.

Patented Dec. 15, 1896.



WITNESSES.

Matthew M. Blunt.
J. Murphy.

INVENTOR.

Charles Burgher

Thos. F. Churchill

ATT - Y.

UNITED STATES PATENT OFFICE.

CHARLES BURGHER, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE
BOSTON AUTOMATIC FIRE ALARM COMPANY, OF PORTLAND, MAINE.

THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 573,134, dated December 15, 1896.

Application filed August 8, 1896. Serial No. 602,137. (No model.)

To all whom it may concern:

Be it known that I, CHARLES BURGHER, residing in Newton, in the county of Middlesex and State of Massachusetts, have invented an
5 Improvement in Thermostats, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention relates to thermostatic instruments of that class now commonly employed in automatic fire-alarm systems, and has for its object to provide a thermostat which is more effectively protected from mechanical injury without decreasing its sensi-
15 tiveness and efficiency.

In accordance with this invention the active members of the thermostat are located within a shell or casing consisting of a body
20 portion, preferably circular in form, and provided at one end with a reticulated or foraminous bottom and at its opposite end with a cap or cover attached to the said body, as will be described, so as to afford free circulation of air through the instrument. The cap
25 or cover referred to is preferably provided with a depending lip or flange, which forms a guard for a purpose as will be described. These and other features of this invention
30 will be pointed out in the claims at the end of this specification.

Figure 1 represents in elevation a thermostatic instrument embodying this invention; Fig. 2, an under side view of the thermostat shown in Fig. 1; Fig. 3, an under side view
35 of the instrument shown in Fig. 1 with the foraminous bottom broken away; Fig. 4, a top or plan view of the instrument shown in Fig. 1 with the cover or cap removed; and
40 Fig. 5, a section on the line 5 5, Fig. 2, looking down.

In accordance with this invention the thermostatic instrument consists, essentially, of a hollow shell or casing, which may be of any
45 suitable or desired form, preferably circular, and composed of a ring or body portion a , having secured to or forming part of it a reticulated or foraminous bottom a' , herein shown as provided with circular openings a^2
50 in the greater portion of its surface.

The hollow shell or casing contains within

it the active members of the thermostat, which members may be of any suitable or desired construction, but preferably that commonly used in the well-known Watkins
55 thermostat, and consisting of an expansible strip a^5 , provided in the present instance with two coils, the said strip being secured at one end to the body a , as by screws $a^6 a^7$, but suitably insulated therefrom, as by pieces $a^8 a^9$ of
60 insulating material. The free end of the expansible strip a^5 coöperates with a contact point or screw a^{12} , carried by a terminal plate, bar, or strip a^{13} , which is fastened to the body
65 a , as by screws $a^{14} a^{15}$, insulated from the said body by pieces $a^{16} a^{17}$ of insulating material. The body a in line with the contact-screw a^{12}
is provided with an opening a^{18} , through which access may be had to the said screw if it is
70 desired to adjust the same with relation to the strip a^5 or if it is desired to remove the same for cleaning or other purposes.

The body or ring a is provided with a cap or cover b , which is supported above the said ring, preferably by a spider or open frame,
75 preferably composed of a raised center portion b' and downwardly-inclined arms b^2 , attached at their ends to the ring or body a . The cap b may be secured to the shell or casing, as herein shown, by a tube or sleeve b^5 ,
80 preferably split longitudinally and having its ends turned outward, as at $b^6 b^7$, (see Fig. 5,) the said tube serving also to secure the bottom a' to the shell a . The cap b may and preferably will be loose on the tube or sleeve
85 b^5 , so as to be free to turn thereon, and preferably one or more washers b^8 will be interposed between the said cap and spider. The cap b is preferably made larger than the ring
90 or body a and is preferably provided with a depending annular flange b^{10} , extended down below the upper edge of the body to form a guard and prevent the entrance into the body of foreign matter, such as paint, whitewash, &c.

The instrument may be secured to the ceiling or wall of a building by a screw c , extended through the tube or sleeve b^5 . In operation the foraminous bottom a' exposes the
95 operative or active members of the instrument to the action of the air, and at the same
100 time protects them from mechanical injury, and is especially effective against the entrance

of paint, whitewash, &c., when the instrument is brushed over by the carelessness of painters and whitewashers, for it will be seen from an inspection of Fig. 1 that in the act
 5 of drawing a brush of paint or whitewash over the instrument the brush will first strike the lower edge of the body or ring a before it comes in contact with the foraminous bottom a' , and as a result the greater portion of
 10 the paint or whitewash will be removed from the brush, so that what remains on the brush will not wholly fill the pores or openings a^2 of the bottom a' , and that quantity of paint or whitewash which may adhere to the bot-
 15 tom will, when dry, contract and leave the openings a^2 uncovered and of substantially the same open condition as before the paint or whitewash was applied.

The foraminous bottom affords a protection
 20 for the operative parts of the instrument without detracting from the sensitiveness of the instrument, but in order to increase the sensitiveness of the instrument the body or ring a is left substantially open at its opposite
 25 end, and the cover b is separated therefrom for the free circulation of air through the instrument.

In practice the instrument is included in a circuit represented by the line-wires $d d'$, con-
 30 nected to the binding-screws $a^7 a^{15}$. I prefer to make the casing or shell and its cap of metal, but they may be made of any suitable material.

If desired, the portion of the bottom a' covering the point of contact of the strip a^5 and screw a^{13} may be left solid or imperforate, as shown in Fig. 2, or it may be provided with openings or pores, as indicated by dotted lines.

I claim—

40 1. In a thermostatic instrument, the combination with a shell or casing provided with

a reticulated or foraminous bottom having a plurality of holes or openings and provided at its opposite end with a spider or open frame having a raised center portion, and a cap or
 45 cover attached to and supported above the said casing or shell by the said raised center portion of the said spider to leave an air space or passage, and active members secured within the said casing or shell, substantially as
 50 described.

2. In a thermostatic instrument, the combination of the following instrumentalities, a shell or casing a opened at its opposite ends, and provided at one end with a spider having
 55 a raised center portion, a foraminous bottom a' detachable from the casing a , a cover b supported on the raised center portion of the spider and provided with a depending flange outside of said casing a , a tube b^5 extended
 60 through the foraminous bottom, the spider and the cap and acting to secure the said bottom and cap to the shell, and active members within the shell and protected by the foraminous bottom, substantially as described. 65

3. In a thermostatic instrument, the combination of the following instrumentalities, a casing or shell composed of a ring or body a having a foraminous bottom, and a spider at
 70 its opposite end, a cap for the opposite end of said shell and provided with a depending flange forming an air-space with the body a , a hollow connection joining said cap to said shell and spider, and active members secured
 75 within said casing, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. BURGHER.

Witnesses:

JAS. H. CHURCHILL,
 J. MURPHY.