

No. 627,322.

Patented June 20, 1899.

C. BURGHER.
THERMOSTATIC INSTRUMENT.

(Application filed June 7, 1898.)

(No Model.)

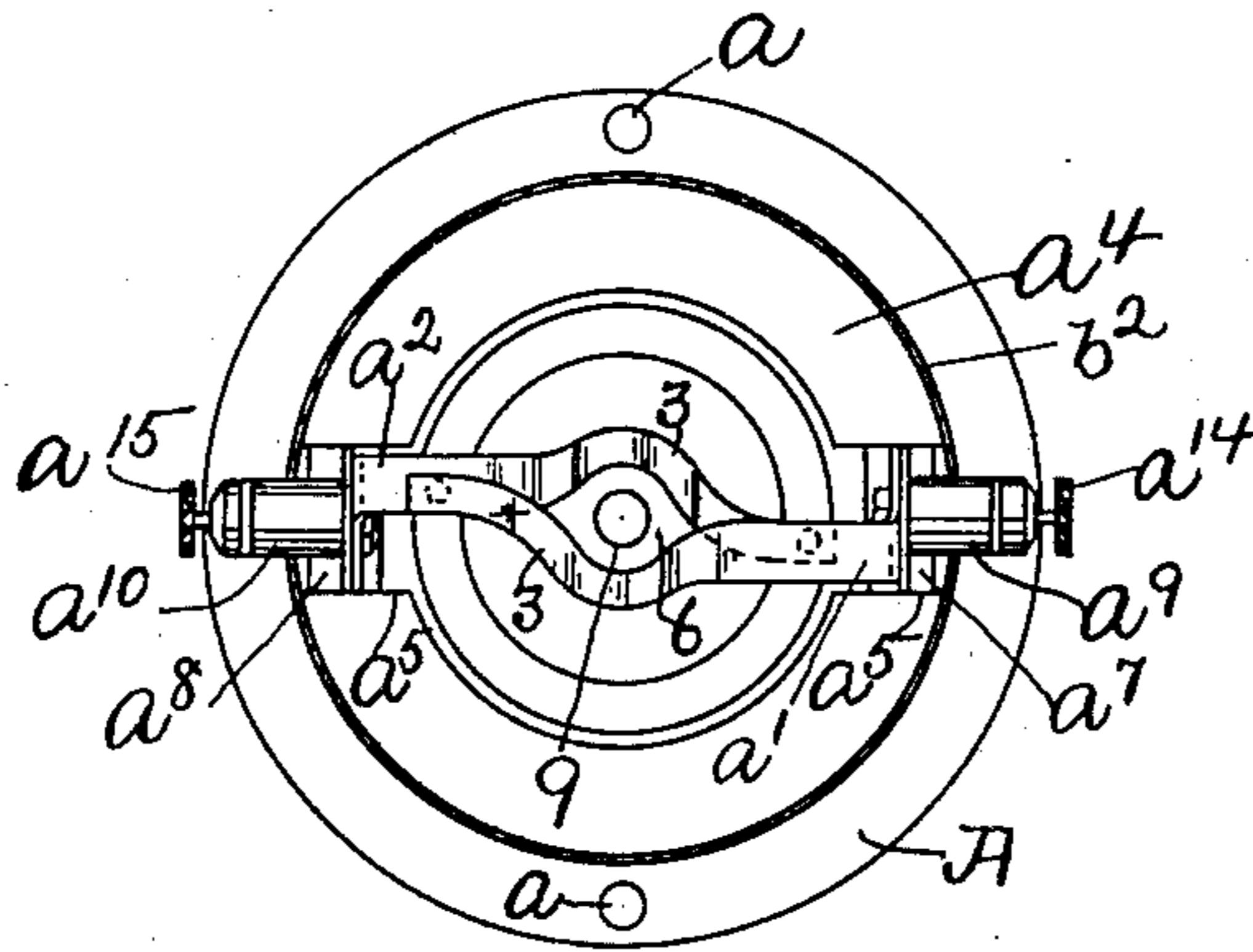
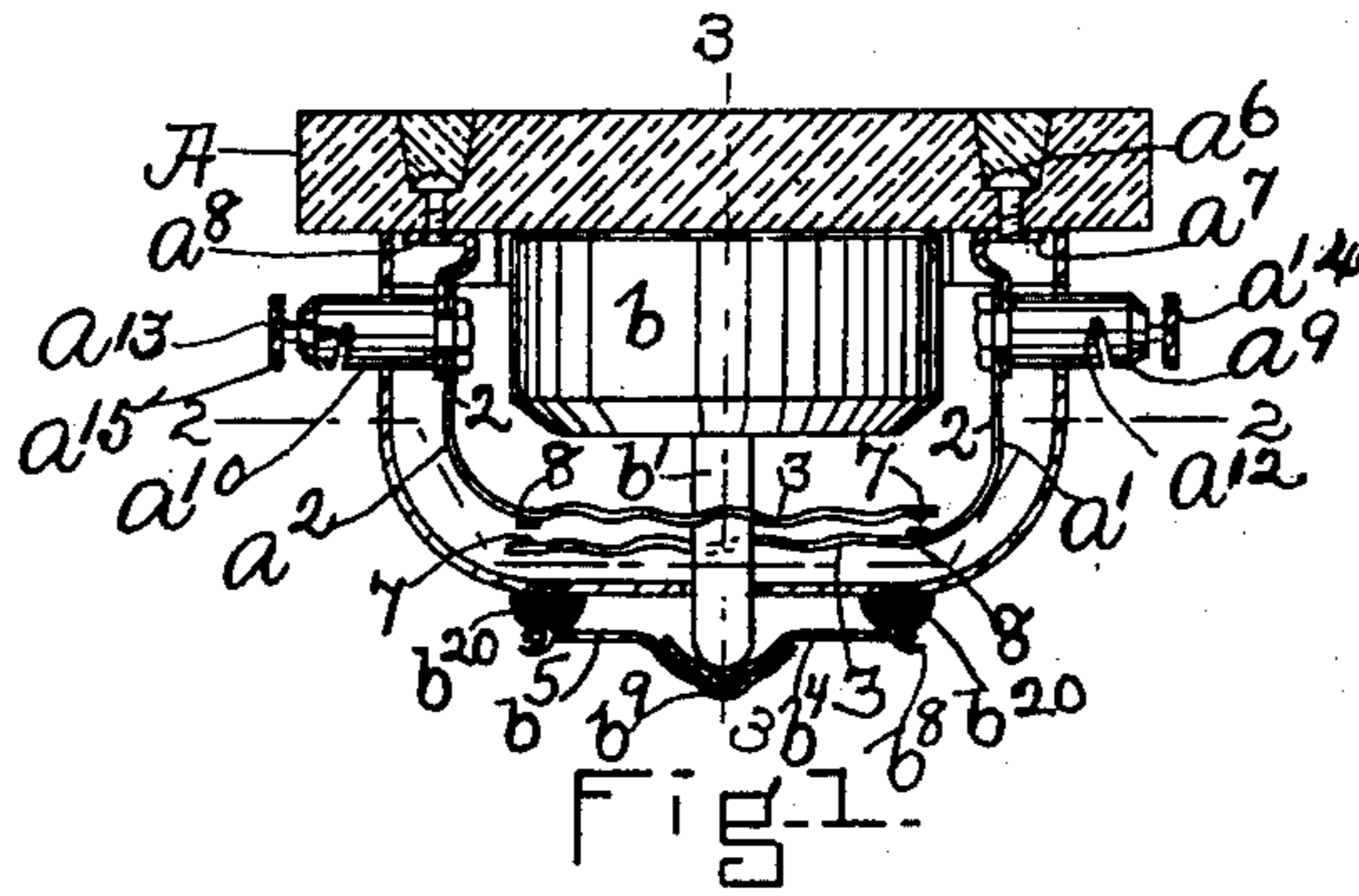


Fig. 2.

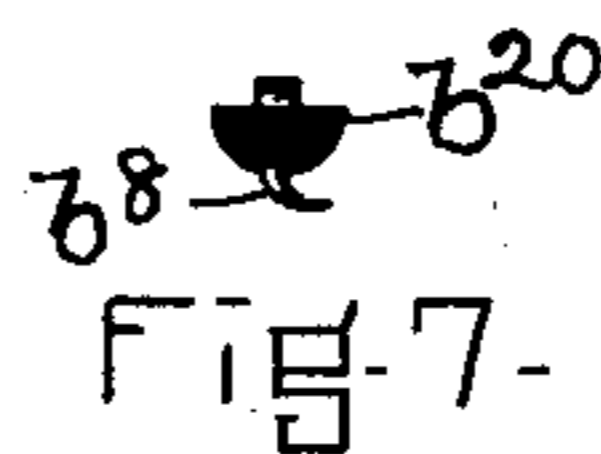


Fig. 7.

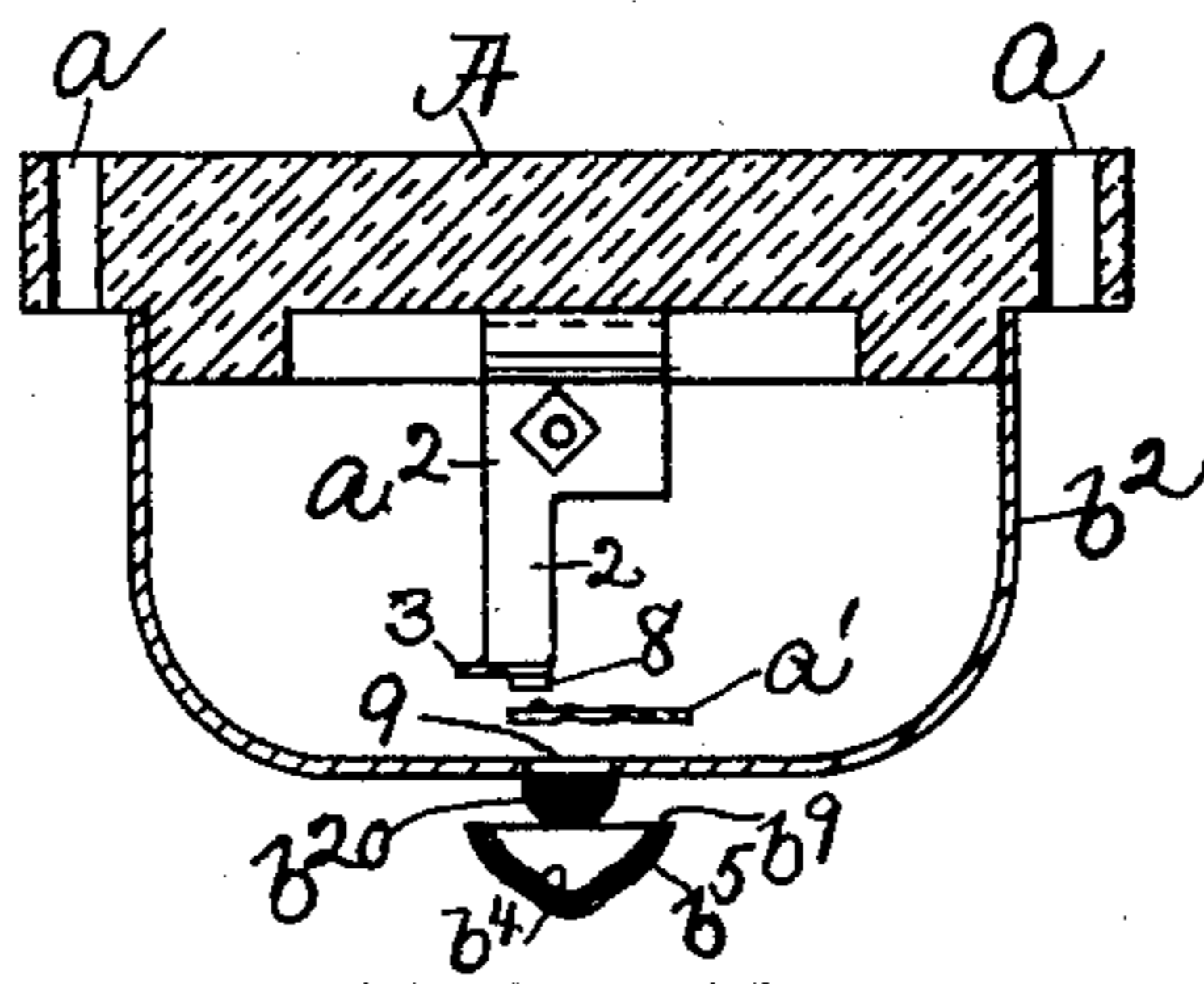


Fig. 3.

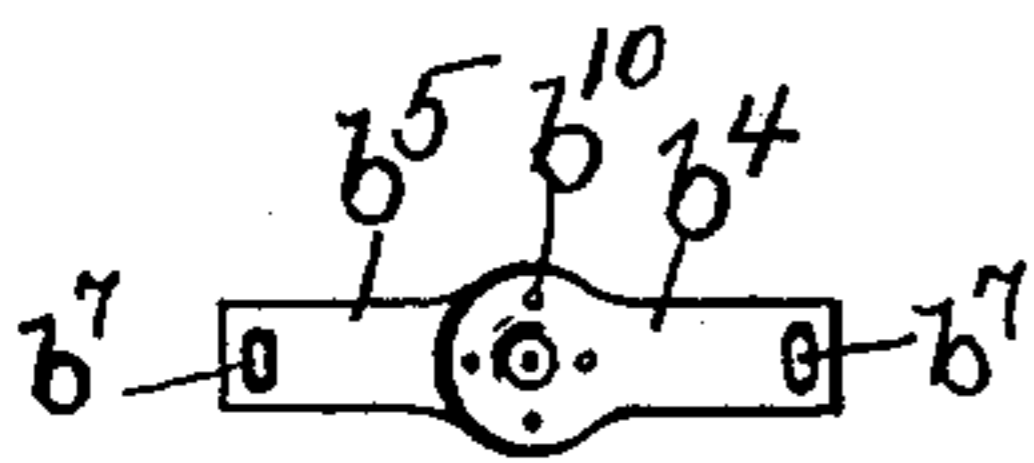


Fig. 4.

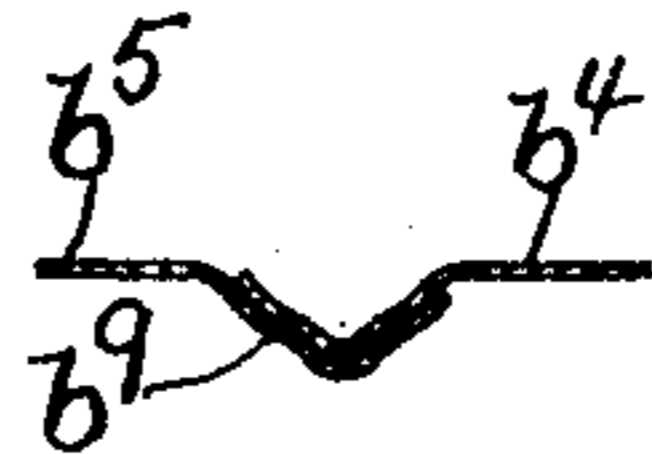


Fig. 5.

WITNESSES.

Matthew M. Blunt
J. Murphy.

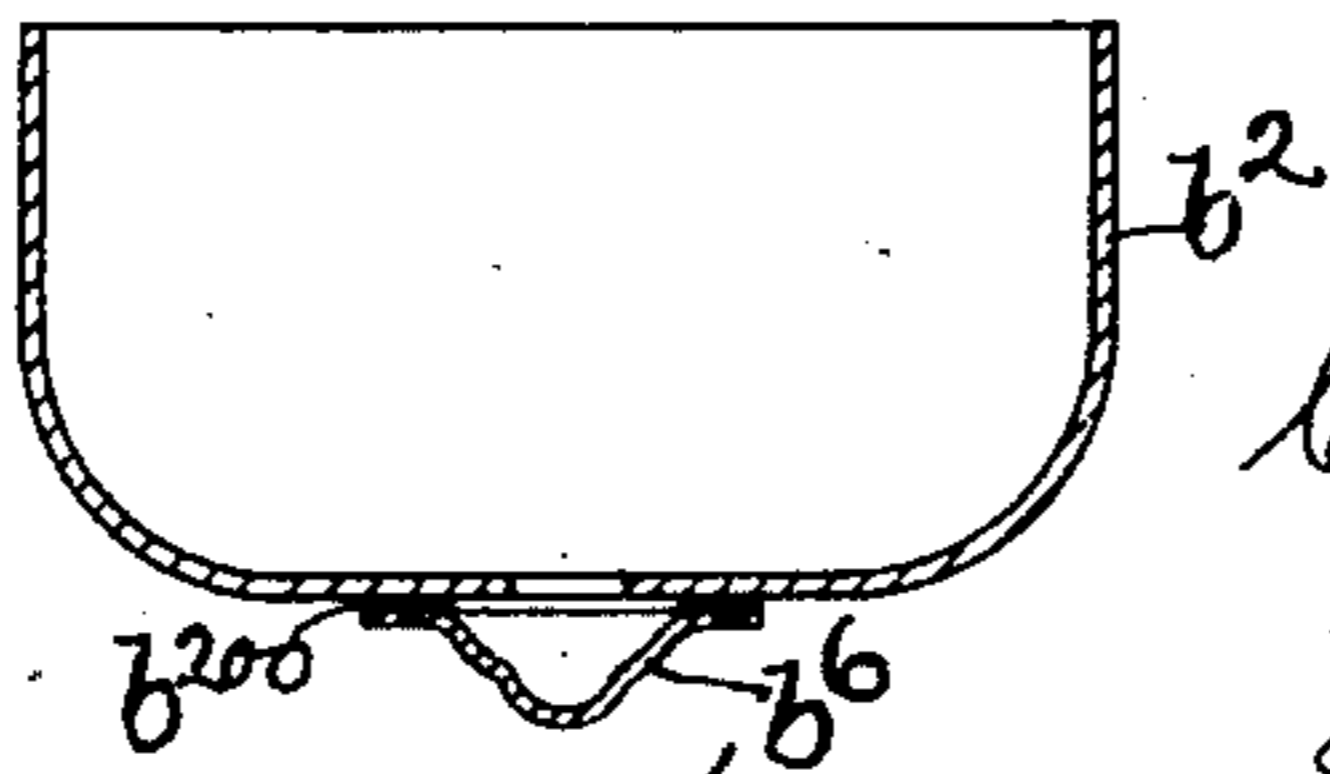


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES BURGHER, OF WINTHROP, MASSACHUSETTS.

THERMOSTATIC INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 627,322, dated June 20, 1899.

Application filed June 7, 1898. Serial No. 682,814. (No model.)

To all whom it may concern:

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

10 This invention relates to a thermostatic instrument for use in automatic fire-alarm systems, and has for its object to provide a simple and efficient instrument for the purpose specified.

15 The particular features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 represents in section and elevation one form of thermostatic instrument embody-
20 ing this invention; Fig. 2, a transverse section of the instrument shown in Fig. 1, taken on the irregular line 2 2, looking upward; Fig. 3, a vertical section on the line 3 3, Fig. 1, looking toward the left; Figs. 4 and 5, details to
25 be referred to; Fig. 6, a modification to be referred to, and Fig. 7 a detail to be referred to.

Referring to Fig. 1, A represents a base or support, of porcelain or other suitable insulating material, which is adapted to be fastened
30 to the ceiling of a room, as by screws, (not shown,) but which may be inserted through holes a .

The base A supports two circuit-terminals, shown as metal arms a' a^2 , each comprising a
35 vertical portion 2 and a horizontal portion 3, and the said terminals may be secured to the base A, as will now be described. The base A on one face has an annular flange a^4 , provided at substantially diametrically opposite
40 points with slots or recesses a^5 , in which are secured, as by screws a^6 , metal arms a^7 a^8 , to which the vertical portions 2 of the terminals a' a^2 are fastened, as by the binding-posts a^9 a^{10} , to which the line-wires a^{12} a^{13} are connect-
45 ed, as by screws a^{14} a^{15} . The horizontal portions or arms 3 of the circuit-terminals extend substantially parallel with the base A and beyond a line through the center of the same, and are curved, as shown in Fig. 2, so as to
50 leave an opening 6, and the free end of each terminal beyond the opening 6 is brought into line with its cooperating terminal, but is sep-

arated therefrom, as herein shown, so that the circuit through the thermostat is normally open. The free end of each terminal may
55 and preferably will be provided with a platinum or other contact point 7, which cooperates with a like contact plate or block 8 on the other terminal.

The circuit-terminals are adapted to be
60 electrically connected by an actuating device, represented as a weight b , provided with a stem or projection b' , which extends through the opening 6 and also through an opening 9
65 in a casing or cover b^2 , which fits over and is secured to the outside of the flange a^4 by screws (not herein shown) or in any other suitable manner.

The weight or actuating device b is normally held in an inactive position by fusible
70 means, preferably solder, which is represented in Fig. 1 as a heavy black line b^9 , and is employed to unite two parts b^4 b^5 of a support for the weight. The parts b^4 b^5 (shown in Figs.
75 1, 3, and 5) are made in the form of small spoons or cup-shaped pieces provided with handles having holes or openings b^7 for the reception of hooks b^8 , attached to lugs or pro-
jections b^{20} , secured to the casing b^2 . The lugs b^{20} may be of insulating material and
80 provided with a metal screw or stem, (see Fig. 7,) which is adapted to be screwed into a threaded hole in the casing b^2 . The bowls or cup-shaped pieces are fitted together and
85 united by the fusible solder b^9 , and, if desired, the said cup-shaped pieces may be provided with holes b^{10} for the passage of the solder, which serves to rivet the pieces b^4 b^5 together.

By reference to Fig. 1 it will be seen that the fusible solder is separated from the bot-
90 tom of the casing by an air-space, which renders the instrument very sensitive, for in case of fire the fusible solder is surrounded by heat. In some localities it is desirable to seal the circuit-terminals from the action of
95 corrosive gases and moisture—as, for instance, in acid-works—and in this case I prefer to make the support for the weight as a single piece b^6 , which is attached to the casing b^2 by fusible solder b^{200} , as shown in Fig.
100 6, which construction seals the opening 9 in the case b^2 .

In operation the weight is normally inactive, being held up off from the circuit-ter-

minals by its support, and the said terminals at such time being open; but when the temperature rises in the vicinity of the instrument sufficient to melt the solder the support for the weight gives way and the latter drops by gravity, and thereby brings the terminal a^2 into contact with the terminal a' and closes the circuit.

I claim—

1. In a thermostatic instrument, the combination of the following instrumentalities, viz: a base, circuit-terminals secured thereto on substantially diametrically opposite sides and provided with cooperating overlapping arms separated to leave an opening 6, a weight to render said cooperating arms active provided with a stem extended through the opening 6, and fusible means to restrain the said weight from contact with the circuit-terminals until released by heat, substantially as described.

2. In a thermostatic instrument, the combination of the following instrumentalities, viz: a base, circuit-terminals secured thereto on substantially diametrically opposite sides and provided with cooperating overlapping arms extended substantially parallel with said base, a casing inclosing said terminals and provided with an opening, a weight within said casing independent of said terminals and provided with a stem or projection extended through said opening, and a fusible support attached to said casing and normally supporting said weight above the overlapping arms of said circuit-terminals, substantially as described.

3. In a thermostatic instrument, the com-

bination of the following instrumentalities, viz: a base, cooperating circuit-terminals attached thereto and normally inoperative, a weight to render said circuit-terminals operative, a stem or projection on said weight, a casing inclosing said terminals and provided with an opening through which said stem or projection extends, a two-part support for said stem and weight, fusible material uniting the said parts, and lugs attached to the said casing and to which the parts of the support are connected, substantially as described.

4. In a thermostatic instrument, the combination of the following instrumentalities, viz: a base, cooperating circuit-terminals attached thereto and normally inactive, a casing inclosing said terminals, an actuating device for said terminals to render them active provided with a stem or projection extended through said casing, and a support for said stem comprising cup-shaped parts provided with handles which are attached to the casing, and fusible material uniting said cup-shaped parts, substantially as described.

5. In a thermostatic instrument, the combination with spoons b^4 , b^5 comprising cup-shaped pieces or bowls fitted together and provided with handles, of fusible material interposed between said bowls and uniting said spoons, substantially as described.

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

CHARLES BURGHER.

Witnesses:

JAS. H. CHURCHILL,
J. MURPHY.