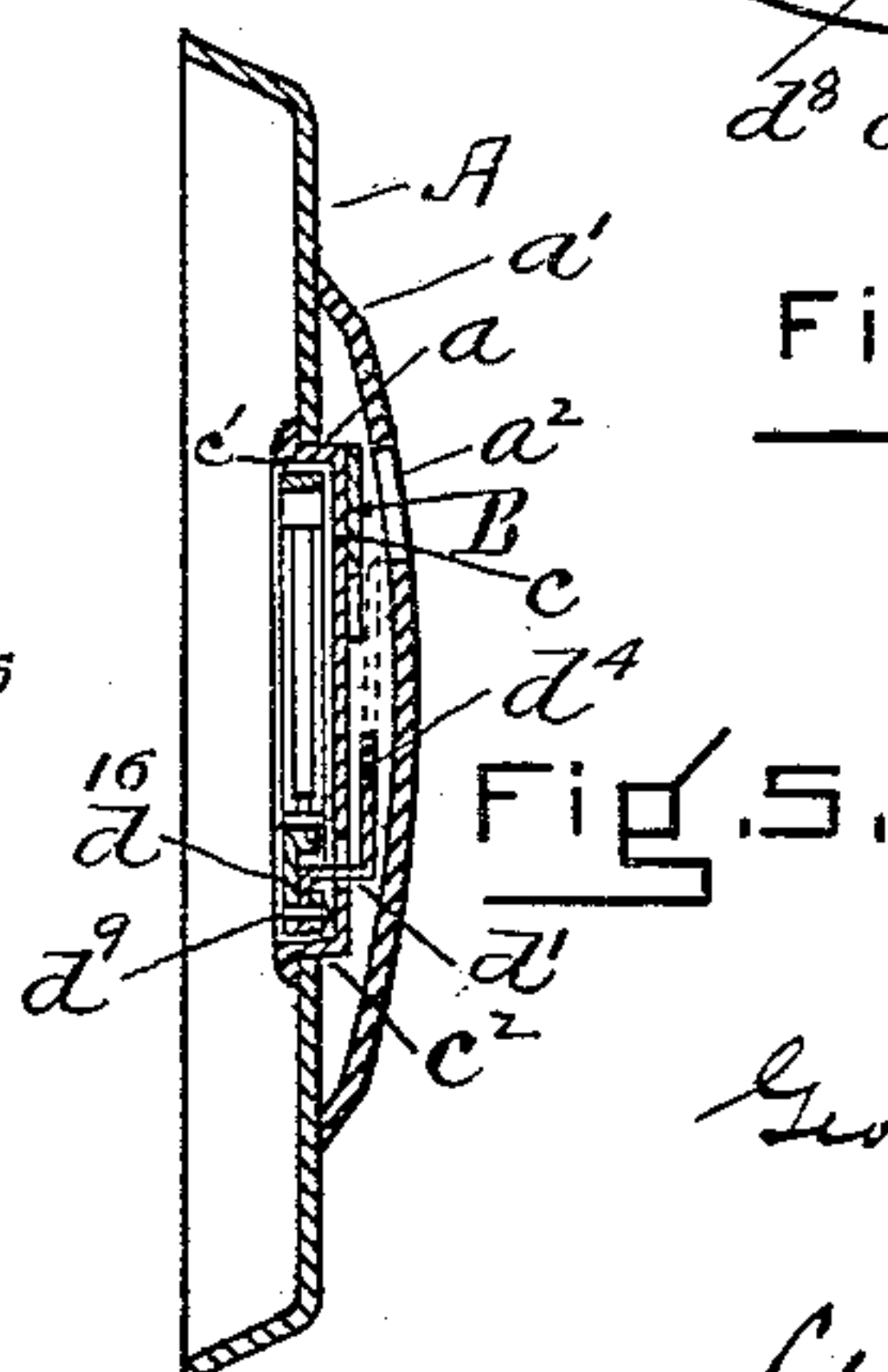
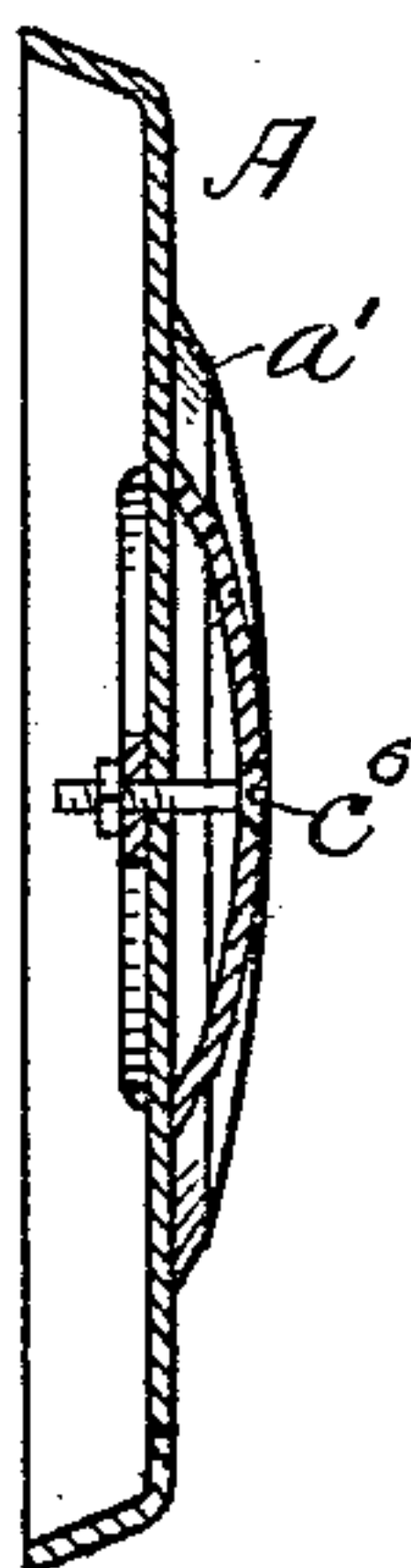
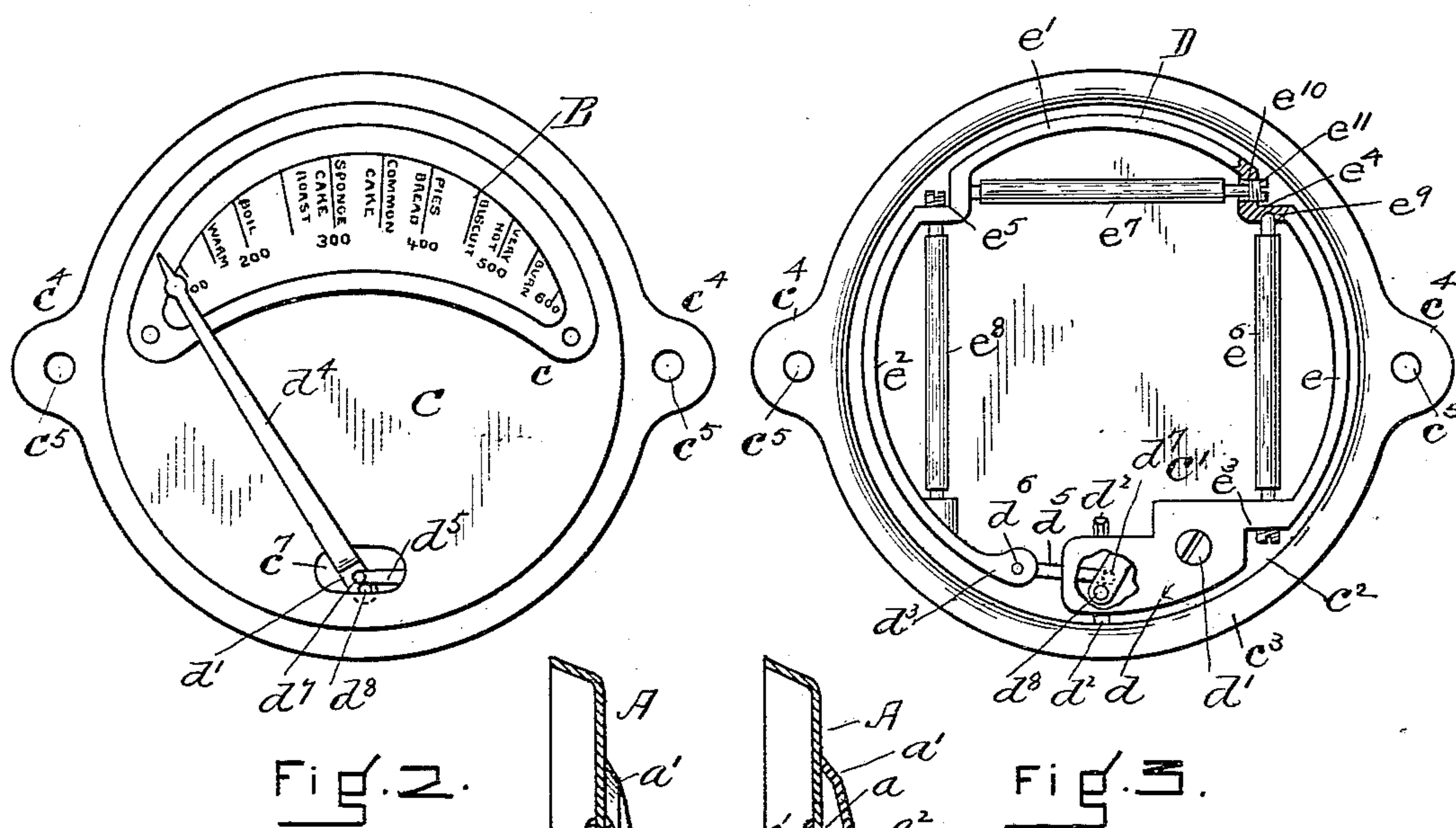
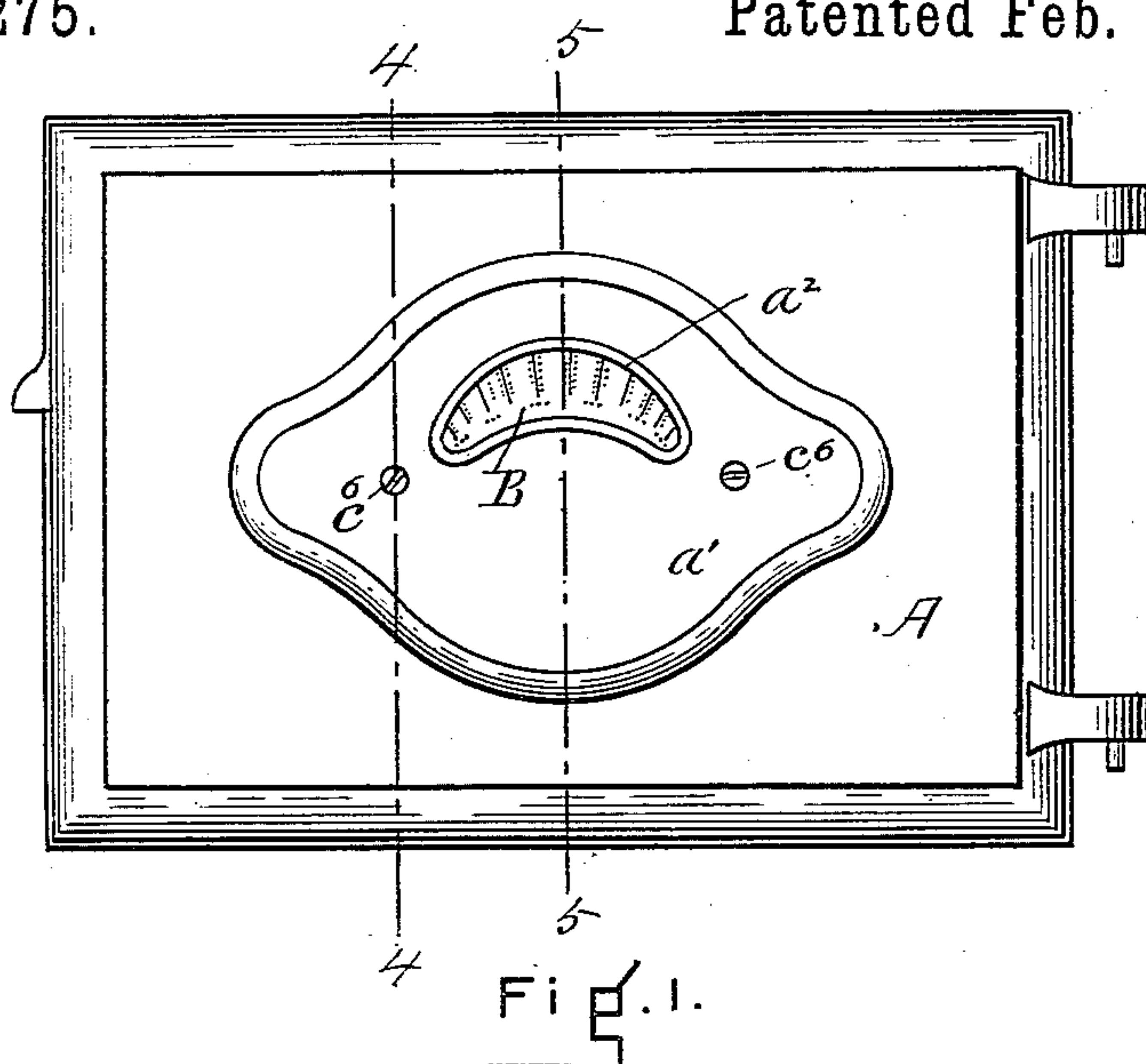


(No Model.)

G. E. WILBUR.  
OVEN THERMOMETER.

No. 555,275.

Patented Feb. 25, 1896.



WITNESSES

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# UNITED STATES PATENT OFFICE,

GEORGE E. WILBUR, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO THE  
WEIR STOVE COMPANY, OF SAME PLACE.

## OVEN-THERMOMETER.

SPECIFICATION forming part of Letters Patent No. 555,275, dated February 25, 1896.

Application filed October 19, 1895. Serial No. 566,201. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE E. WILBUR, a citizen of the United States, residing at Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Oven - Thermometers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to the herein-described oven-thermometer and means for attaching it to the oven-door or other support.

Figure 1 is a view in front elevation of an oven-door equipped with my invention. Fig. 2 is a view, enlarged and in plan, of the plate or support to which the thermometer is attached. Fig. 3 is a view of rear elevation in said plate and of the parts of the thermometer mounted thereon. Fig. 4 is a view in vertical section upon the dotted line 4 4 of Fig. 1. Fig. 5 is a view in vertical section upon the dotted line 5 5 of Fig. 1.

In the drawings, A represents the oven-door. It has the circular hole  $a$ , which is partially covered by the name-plate  $a'$  upon the outer side of the door and bolted to it. This name-plate has a curved recess or hole  $a^2$  in line with the hole  $a$  in the oven-door, and which is of a size and shape to receive the dial or indicator plate B of the thermometer or permit it to be seen and read, the indicator-plate being preferably of a crescent form. This plate is attached to the outer surface,  $c$ , of a dish-shaped plate C, forming the casing and support of the thermometer. It has a cavity  $c'$  which opens into the oven and is surrounded by a circular wall  $c^2$  and the flange  $c^3$ . The wall is of a size to fit and enter the hole  $a$  in the oven-door and the flange has ears  $c^4$  in which are bolt-holes  $c^5$ , which receive the bolts  $c^6$  that fasten the name-plate to the oven-door, so that the name-plate and the thermometer are secured to the oven-door by the same bolts.

The thermometer comprises a cast-iron ring D of a size slightly smaller than the wall  $c^3$ . This ring is not continuous, the end  $d$  being preferably flattened and made fast to the dish-plate by the screw  $d'$  and the lugs or ears  $d^2$ , while the other end,  $d^3$ , of the ring is free to

move and is connected with the indicator-hand  $d^4$  by a link  $d^5$ , which is pivoted at  $d^6$  to the free end of the ring and at  $d^7$  to the indicator-hand, the indicator being pivoted at  $d^8$  to the inner surface,  $d^9$ , of the fixed end  $d$  of the ring, this inner surface preferably being depressed somewhat, forming a recess or chamber which is protected by the wall  $d^{10}$  and the surface  $d^9$  of which is in line with the inner side of the free end of the ring. The indicator-hand  $d^4$  is in the main upon the outside of the dish-plate and it extends upon the dial or indicator plate. This result is reached by forming a hole  $c^7$  in the back of the dish-plate and by providing the hand with the inset-section  $d'$  at its pivoted end, which projects through the hole. The body of the ring is thin and flat in cross-section and it is divided into the parts  $e$   $e'$   $e^2$  by inwardly-extending sections  $e^3$   $e^4$   $e^5$ , which are of the shape of a right angle and between which extend rods or tubes of a metal more expansible than cast-iron, such as brass or a composition thereof. These expansible rods are lettered  $e^6$   $e^7$   $e^8$ , respectively, and each extends between two ends of a section of the ring, forming an arc, and is held thereto by means of a hole  $e^9$ , which does not extend through the angle and against which the end of the rod bottoms, and a hole  $e^{10}$  which does extend through the angle is threaded and receives a threaded adjusting-stud  $e^{11}$ , which is adapted to be screwed against the end of the rod which enters said hole and thus secures it in place with any desired stress, bringing the arc of the ring across which it extends to any desired tension. It will be understood that by adjusting these studs the ring is easily set to a shape necessary to bring the hand at one or the zero side of the dial at normal temperature; and it will also be understood that upon the heating of the rods the circle described by the ring is enlarged, thereby causing its free end to draw on the link and move the indicator-hand along the dial.

By holding the thermometer in a dish-plate open to the oven it is made immediately sensitive to variations in the heat thereof. The indicator or dial bears upon its exposed surface the degrees of heat desirable for various kinds of cooking. For instance, opposite



"200°" is "Boil;" opposite "300°" "Sponge-cake, roast;" opposite "400°" "Pies, bread."

While I have described the indicator as attached to oven-door and used in connection with cooking-stoves and ranges, I would not be understood as limiting the invention to such location or use.

I have described the ring as having three extensible rods, but I do not commit myself to that number. It will be understood that the cast-iron ring is adapted to be enlarged by the extension of the rods under heat, and that as the rods cool it resumes its original size and shape.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A heat-indicator comprising a cast-iron ring, one end of which is fixed and the other end free, and one or more rods or tubes extensible by heat attached to the ring to extend across an arc or arcs thereof and by its or their extension spread or increase the size of the ring whereby the free end thereof is provided with movement and an indicator-hand connected with said free end, substantially as described.

2. In a heat-indicator the cast-iron ring fastened at one end and having the other end free provided with the angular sections  $e^3 e^4 e^5$  and extensible rods or tubes  $e^6 e^7 e^8$  extending across the ring between the angular sections thereof, as and for the purposes described.

3. In a heat-indicator the cast-iron ring one or more tubes or rods extensible by heat connected with the ring and means for exerting

tension upon the sections of the ring which they connect, as and for the purposes described.

4. In a heat-indicator the combination of the cast-iron ring one end of which is fixed and the other free, an extensible rod or tube arranged across the arc of the ring and bearing at one end against the ring and an adjusting-screw or device carried by the ring to bear against the other end of said extensible rod or tube, as and for the purposes described.

5. In a heat-indicator the cast-iron ring having the base  $d$  and indicator-hand pivoted to said base, one or more rods or tubes extensible by heat arranged across an arc, or arcs of the ring, and a device connecting the free end of the ring with the indicator-hand whereby its movement is imparted thereto, substantially as described.

6. In a heat-indicator a plate having upon its outer side a crescent-shaped dial, a hole in said plate through which the indicator-hand extends, a cavity upon the inner side of said plate open to the oven and the heat-indicator contained in said cavity comprising a cast-iron ring, one end of which is fixed to the plate and the free end of which is connected with the indicator-hand; one or more rods extensible by heat extending across one or more arcs of the ring, as and for the purposes described.

GEORGE E. WILBUR.

In presence of—

NELLIE B. LEONARD,  
ELISHA T. JACKSON.