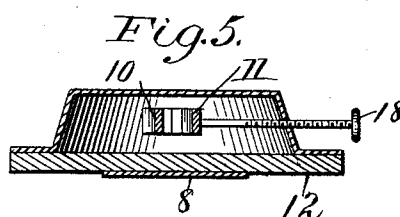
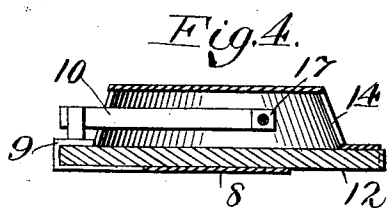
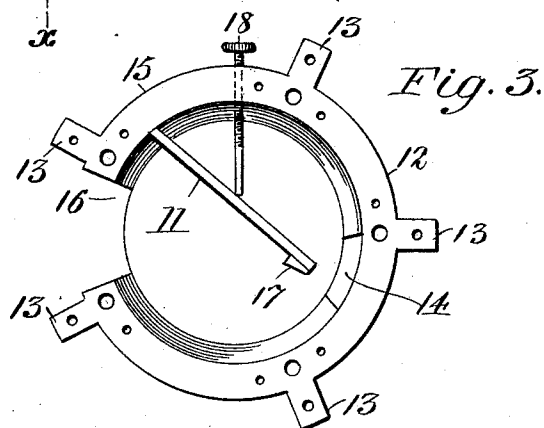
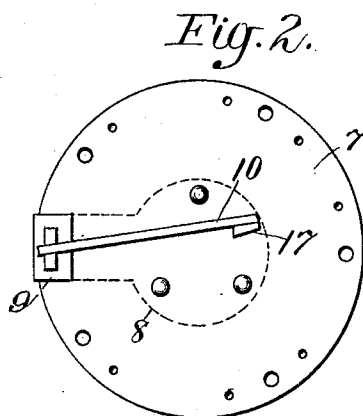
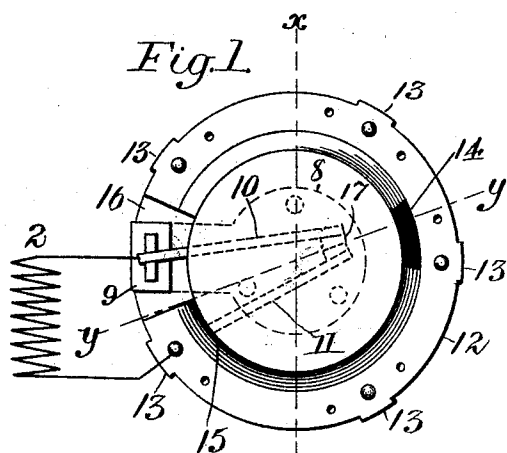


(No Model.)

J. E. MEEK.
ELECTRIC THERMOSTAT.

No. 568,451.

Patented Sept. 29, 1896.



Witnesses:

Samuel C. Brown

Robert S. Stodart

Inventor:

John Emory Meek
by *A. Vail Smith*
Atty.

UNITED STATES PATENT OFFICE.

JOHN EMORY MEEK, OF NEW YORK, N. Y., ASSIGNOR TO THE H. W. JOHNS
MANUFACTURING COMPANY, OF SAME PLACE.

ELECTRIC THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 568,451, dated September 29, 1896.

Application filed May 29, 1896. Serial No. 593,580. (No model.)

To all whom it may concern:

Be it known that I, JOHN EMORY MEEK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Electrical Thermostats; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to electrical thermostats, and while it is capable of application to all the uses to which thermostats may be put, it is more particularly designed for controlling the current in electric heaters, and is specially adapted for use in flexible electric heaters.

In general my invention consists of a plate of insulating material, a metallic plate connected thereto, and a pair of contact-points adapted to approach or recede one from the other under varying conditions of temperature, located in a space formed between said plates by dishing one of them away from the other, and connections for an external electric circuit or circuits.

The preferred form of my invention is illustrated in the accompanying sheet of drawings, in which—

Figure 1 is a plan view of my thermostat connected to an electric circuit, with the internal portions thereof shown in dotted lines. Fig. 2 is a similar view of the insulating-plate with the metallic plate shown in dotted lines. Fig. 3 is a reverse view of the upper metallic cap and parts attached thereto. Fig. 4 is a cross-section on line Y Y of Fig. 1. Fig. 5 is a cross-section on line X X of Fig. 1. Fig. 6 is a detail of one of the bimetallic contact-pieces.

Throughout the specification like reference-figures refer to like parts.

2 represents an electric circuit, which is to be controlled by the thermostat, said circuit having its terminals connected, respectively, to the contact-piece 9 and the metallic cap 12. This thermostat is composed of the plate of insulating material 7, which is preferably made circular, as shown in Fig. 2. A bimetallic contact arm or piece 10 is mounted

on said insulating-plate by any convenient means, the preferable arrangement being that shown in Fig. 2, where 8 represents a small plate riveted to the under side of the insulating-plate and having an extension 9, which bends up over one edge of said insulating-plate, to which bent portion the contact-piece 10 may be soldered, as shown.

12 is a piece of conducting material, preferably metallic, to which the other contact piece or arm 11 is fastened at 15. This metallic plate has proper means for attaching it to the insulating-plate 7. The preferred means shown consists of the lugs 13, which may be bent under and around the insulating-plate and rivets passed through the two, as indicated in Figs. 1 and 3.

One or the other of the two plates 7 and 12 is dished away, so as to form a space between the two when they are fastened together. Preferably, of course, the metallic plate 7 is dished and the insulating-plate made flat. Within the space thus formed the two contact-pieces 10 and 11 are located and arranged, as shown in Fig. 1. 14 and 16 are openings in the metallic plate 12, the first one to permit inspection of the contact-pieces 10 and 11 and the second one, 16, to prevent contact between the plate 12 and the bent extension 9 of the plate 8.

The contact pieces or arms are provided with platinum points 17 17 in order to prevent their being melted by any heating or sparking which may occur. 18 is a set-screw for adjusting the position of the contact-piece 11, and thereby regulating exactly the temperature at which it shall touch the contact-piece 10.

The method of operation of my invention is as follows: The contact-pieces 10 and 11 are constructed by soldering together or otherwise fastening together two strips of metal, which expand and contract at unequal rates through changes of temperature. Preferably I use a strip of steel and a strip of zinc for low temperature and steel and brass for high temperature. In the arrangement shown the strips of zinc or brass are on the inside (referring to Fig. 1) and the strips of steel on the outside. Connections from the outside circuit are made to the contact-piece 10 by

attaching the wire to the plate 8 or extension 9, and connections to the contact-piece 11 are made by attaching the other wire of the circuit to the plate 12 at any convenient point. Such being the arrangement, when the temperature of the thermostat is raised above a given point the extension of the strips of zinc or brass will separate the platinum points 17 17 and break the circuit. When the thermostat has cooled off by radiation to a sufficient degree to lower the temperature below the given point, the platinum points 17 17 will again come in contact and the circuit be established.

It is evident that the reversal of the relative positions of the zinc or brass and steel would cause the circuit to be closed when the temperature rose above the given point and to open when it fell below that point.

The advantages of my invention consist in its neat and compact form, simplicity of parts, and the complete protection of the operative parts by the surrounding plates, whereby it can be placed at any convenient point in a flexible heater and subjected to the ordinary pressure which said heater might undergo in use upon the human body and elsewhere, without damaging the thermostat or interrupting its perfect working.

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

1. In a thermostat the combination of the plate of insulating material, the metal plate fastened to one side of the insulating-plate, one of said plates being dished away from the other so as to form a space between, two bimetallic contact-pieces adapted to approach or recede one from each other under varying conditions of temperature, located in said space, and electric connections from said contact-pieces to an exterior electric circuit, substantially as described.

2. In a thermostat the combination of the plate of insulating material, the metal plates fastened to one side of the insulating-plate, one of said plates being dished away from the other so as to form a space between, two bimetallic contact-pieces located in said space and adapted to approach or recede from each other under varying conditions of temperature, one of said contact-pieces being mounted on the metal plate and the other on the insulating-plate, substantially as described.

3. In a thermostat the combination of the insulating-plate, the metallic plate attached to and dished away from the insulating-plate so as to form a space between, two bimetallic contact-pieces located in said space and adapted to approach or recede from each other under varying conditions of temperature, one of said pieces being connected to the dished metallic plate and the other mounted on the insulating-plate and connected to a second metallic plate on the opposite side of said insulating-plate, substantially as described.

4. In a thermostat the combination of the plate of insulating material, the metal plate fastened to one side of the insulating-plate, one of said plates being dished away from the other so as to form a space between, two bimetallic contact-pieces adapted to approach or recede one from each other under varying conditions of temperature, located in said space, and electric connections from said contact-pieces to an exterior electric circuit, together with means for adjusting the position of one of said contact-pieces, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN EMORY MEEK.

Witnesses:

HERBERT G. WHIPPLE,
A. PARKER SMITH.