BEST AVAILABLE COPY

Dec. 22, 1925.

1,566,699

E. A. SCHOLTZ

THERMOSTATIC CONTROL

Filed April 22, 1924

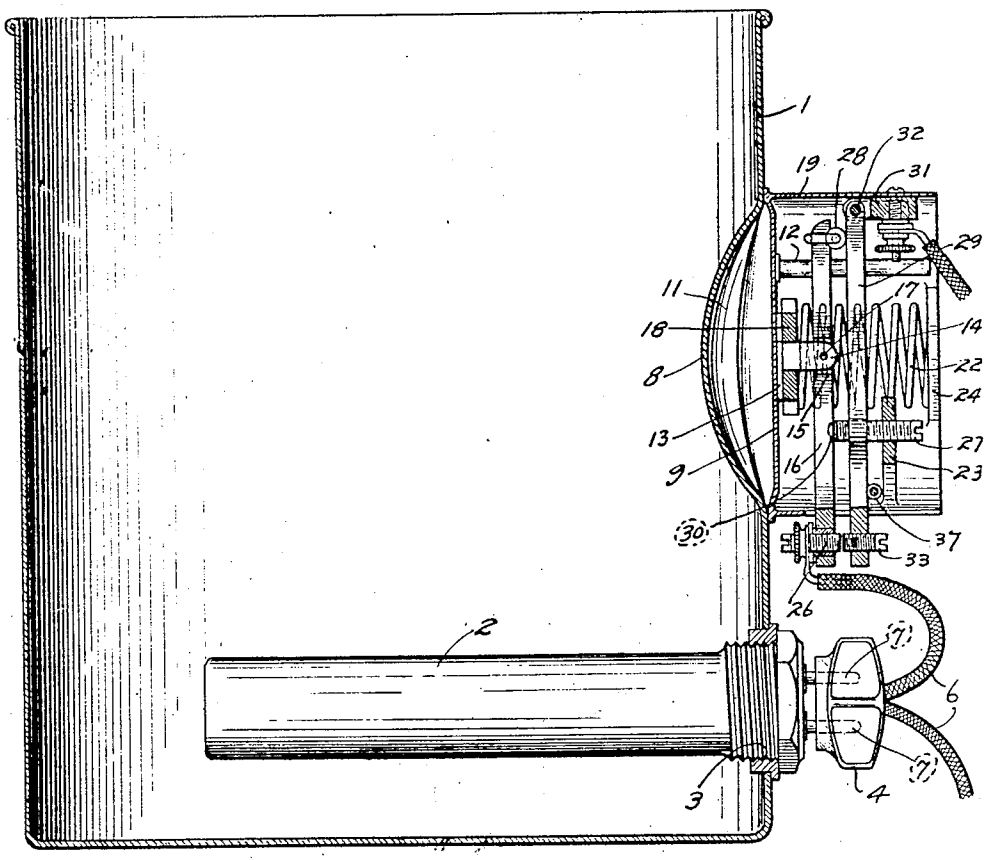


Fig. 1

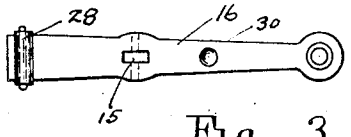


Fig. 3

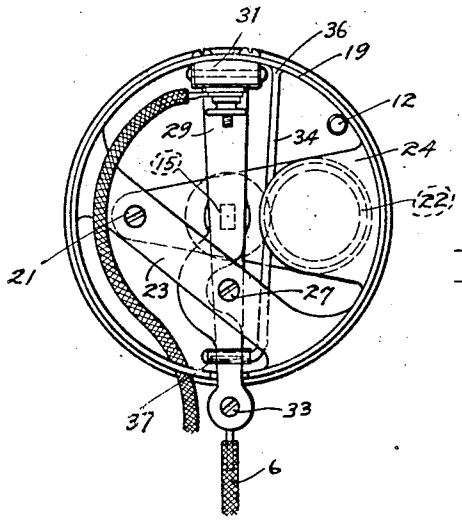


Fig. 2

INVENTOR.
EDWARD A. SCHOLTZ

BY

ATTORNEYS.

BEST AVAILABLE COPY

Patented Dec. 22, 1925. 1,566,699

UNITED STATES PATENT OFFICE.

EDWARD A. SCHOLTZ, OF SAN FRANCISCO, CALIFORNIA.

THERMOSTATIC CONTROL.

Application filed April 22, 1924. Serial No. 708,256.

To all whom it may concern:

Be it known that I, EDWARD A. SCHOLTZ, a citizen of the United States, and a resident of San Francisco, county of San Francisco, and State of California, have invented a new and useful Thermostatic Control, of which the following is a specification.

The present invention relates to improvements in a thermostatic control for electric elements, and its particular object is to provide a control for an electric circuit that will automatically maintain water heaters, glue kettles, barber, hospital and restaurant heating supplies and similar devices at a desired temperature. It is particularly proposed in the present invention to provide a device of this character that is very simple in construction and very accurate in its action. Further objects and advantages of my device will appear as the specification proceeds.

The preferred form of the device is illustrated in the accompanying drawing, in which Figure 1 shows a vertical section through my thermostatic control as attached to a vessel, Figure 2 a front view of the same, and Figure 3 a detail view of a contact supporting lever used in my device. While I have shown only the preferred form of the invention, it should be understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

The vessel (1) which may be filled with water or any other liquid to be heated and to be maintained at a certain temperature, has a heating element (2) threaded into the wall of the same as shown at (3) with a plug (4) connecting the two wires (6) with the electrodes (7) of the heating element.

The wall of the vessel has two concave diaphragms (8) and (9) embodied therein which form a chamber (11) adapted to be filled with a liquid through the tube (12) which latter may be sealed after the chamber and the tube have been completely filled by means of a soft metal adapted to be removed with the aid of a drill in case it should become necessary after several years' use to refill the chamber.

The outer diaphragm (9) has a disk (13) secured to its central portion, and from the disk extends a short bar (14) into a perforation (15) in the lever (16), which latter is pivoted in the bar by means of a pin (17).

A plate (18) extends diametrically across the diaphragm within the cylinder (19) extending laterally from the vessel so as to surround the space occupied by the diaphragms, and is made to bear on the disk (13) and through the same on the diaphragm (9) by means of a screw (21) bearing on one end of the plate and a spring (22) bearing on the other end of the plate. The screw is threaded into a bar (23) stretched diagonally across the outer end of the cylinder, while the spring (22) is held in place by means of a lip (24) extending inwardly from the outer end of the cylinder.

The lever (16) previously mentioned has a contact (26) mounted on the lower end thereof and one of the wires (6) is in metallic connection with this contact. A screw (27) threaded into the diagonal member (23) bears upon the outer face of this lever between its pivot (17) and the contact (26), the lever being recessed for this purpose as shown at (30). The other end of the lever has a roller (28) preferably made of glass or some other suitable insulating material supported thereon with freedom of rotary motion, which latter roller contacts an arm (29) pivoted in the insulating block (31) as shown at (32) in close proximity to said pivot. The arm (29) is of substantially the same length as the lever (16) and supports at its free end a contact (33) which latter confronts the contact (26). Both of these contacts are preferably screwed into their supports so that their normal distance from one another may be regulated.

A spring (34), one end of which is secured in the cylinder (19) as shown at (36) runs substantially parallel to the arm (29) and supports at its end a glass roller (37) bearing on the arm (29) and tending to force the two contacts (26) and (33) together. The arm (29) is preferably bent in the manner shown in Figure 2 so as to render the screw (27) accessible.

The operation of the device is as follows:

Normally the two contacts (26) and (33) touch one another, due to the action of the spring (34) which bearing on the free end of the arm (29) forces the contact supported on said arm in the direction of the other contact. The spring action is at the same time transmitted through the roller (28)

BEST AVAILABLE COPY

to the lever (16) and has a tendency to force the contact (26) toward the contact (33) so that the two contacts are normally touching.

If the heat of the liquid in the vessel (1) begins to exceed a predetermined temperature and the liquid in the chamber (11) expands beyond a predetermined degree, the expanding diaphragm (9) forces the pivot (17) to swing the lever (16) on the point of the screw (27) in such a manner that the contact (26) recedes from the contact (33), while at the same time through the action of the roller (28) on the arm (29) the contact (33) is made to recede in the opposite direction so that both contacts recede from the normal position and open the electrical circuit of the heating element.

The exact point at which the control responds may be regulated by setting the screw (27) as well as by changing the tension of the spring (22) by manipulating the screw (21).

I claim:

1. In a thermostatic control, a heat responsive element, a lever fulcrumed to follow the motions of said element, means for arresting the motion of one end of said lever and an arm pivoted near the free end of the lever having a contact thereon and allowing the free end of the lever to operate the same for opening and closing an electric circuit.

2. In a thermostatic control, a heat responsive element, a lever fulcrumed to follow the motion of said element, an adjustable member bearing on one end of the lever for arresting the motion of the same, and an arm pivoted near the free end of the lever having a contact thereon and allowing the free end of the lever to operate the same for opening and closing an electric circuit.

3. In a thermostatic control, a heat responsive element, a lever fulcrumed to follow the motions of said element, means for arresting the motion of one end of said lever, and an arm pivoted near the free end of the lever having a contact therein and yielding means associated therewith for urging the contact toward a second contact, the free end of the lever bearing on the arm near the pivot thereof for separating the contacts when the heat responsive element expands.

4. In a thermostatic control, a heat responsive element, a lever fulcrumed to follow the motions of said element, an adjustable member bearing on one end of the lever for arresting the motion of the same, and an arm pivoted near the free end of the lever having a contact thereon and yielding means associated therewith for urging the contact toward a second contact, the free end of the lever bearing on the arm near the point thereof for separating the contacts when the heat responsive element expands.

EDWARD A. SCHOLTZ.