

No. 725,334.

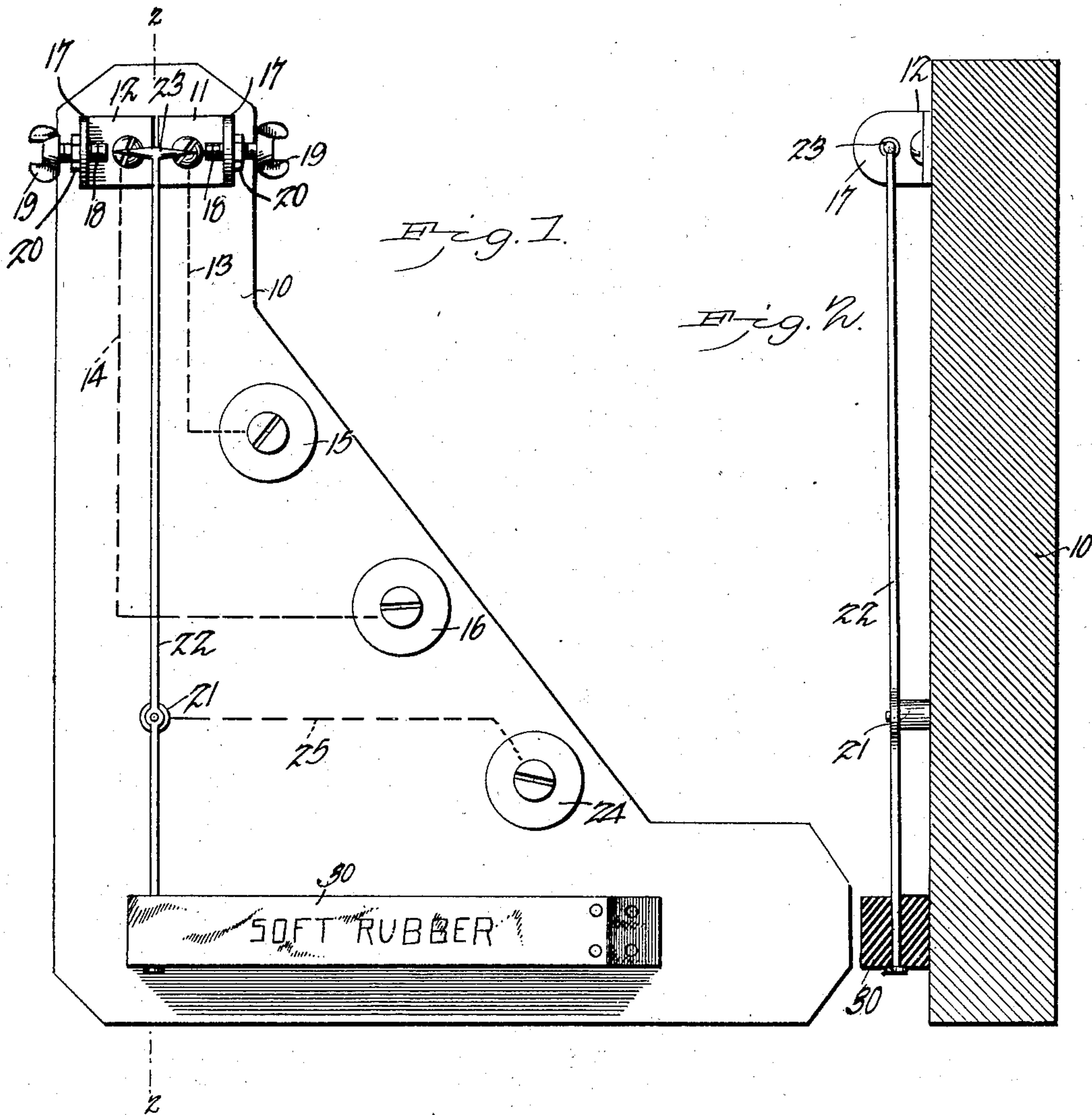
PATENTED APR. 14, 1903.

H. W. GERMINER.

THERMOSTAT.

APPLICATION FILED NOV. 5, 1902.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY WM. GERMINER, OF NEW BOSTON, OHIO, ASSIGNOR OF ONE-HALF
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THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 725,334, dated April 14, 1903.

Application filed November 5, 1902. Serial No. 130,172. (No model.)

To all whom it may concern:

Be it known that I, HENRY WM. GERMINER, a citizen of the United States, residing at New Boston, in the county of Scioto and State of Ohio, have invented a new and useful Thermostat, of which the following is a specification.

The invention relates to certain improvements in thermostats of that class employed in incubators, greenhouses, refrigerators, and other places to sound an alarm when the temperature is increased or decreased, or it may be used in buildings to sound an alarm in case of fire, or employed in connection with heating and ventilating plants for operating dampers and the like to control the temperature of a room.

The principal object of the invention is to provide a thermostat extremely sensitive to fluctuations of temperature and which may be accurately regulated to close one or more electrical circuits when the temperature rises or falls a predetermined number of degrees from the normal.

A further object of the invention is to provide a thermostat of simple and economical construction in which the sensitive member is formed of an elongated bar or strip of soft rubber.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claim, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a front elevation of a thermostat constructed in accordance with the invention. Fig. 2 is a sectional elevation of the same on the line 2 2 of Fig. 1.

10 indicates a base-plate, which may be formed of wood or metal or other suitable material, the plate carrying all of the members of the thermostat, so that the device may be secured in any desired position. At the upper portion of the base are two plates

11 and 12 respectively connected by current-conducting wires 13 and 14 to binding-posts 15 and 16. On each of the plates is an outwardly-bent ear 17, having a threaded opening for the reception of an adjustable contact 18 in the form of a threaded bolt having an adjusting-knob 19 and a lock-nut 20, by which the bolt may be secured in any position to which it is adjusted.

Projecting from the base-plate is a stud 21, on which is mounted a lever 22, having at its upper end a transverse bar 23, said bar having two pointed ends facing in opposite directions and forming one terminal of an electric circuit, which is closed to sound an alarm when the bar is moved into contact with one or other of the adjustable contacts 18. The stud 21 is electrically connected to a binding-post 24 by a conductor 25, the three binding-posts 15, 16, and 24 being arranged adjacent to each other near one side of the base-plate and in convenient position for attaching the current-conducting wires leading to an electromagnetic alarm or other mechanism to be operated by the closing of the circuit or circuits.

30 designates an elongated bar or strip of soft rubber, preferably rectangular in cross-section in order to expose an extensive area to the action of the air or fluid. The opposite end of the bar or strip is secured to the lower end of the pivoted lever 22 and operates the same as said bar or strip expands or contracts under the influence of thermic or barometric changes. When exposed to the action of rising temperature, the bar or strip expands and forces one end of the terminal bar 23 into engagement with the contact carried by the plate 11, closing one circuit having its terminals connected to the binding-posts 15 and 24, respectively, and when exposed to falling temperature the bar or strip contracts and forces the terminal bar 23 into engagement with the opposite contact, closing the circuit through another alarm, the terminal wires of said circuit being connected to the binding-posts 16 and 24.

The contacts carried by the plates 11 and 12 may be readily adjusted to any desired distance from the terminal bar 23 in order that the alarm-circuits may be closed after a

variation of one or two or more degrees from the normal.

It has been found in practice that an elongated bar or strip of rubber is extremely sensitive to variations of temperature, and while it does not respond so quickly to sudden fluctuations as the metals usually employed for the purpose it is found to be more reliable in that expansion and contraction occur gradually, and where there is considerable variation the yielding nature of the material prevents injurious contact between the electrodes and avoids any bending or twisting of the pivoted lever carrying said electrode. The rubber is furthermore advantageous in that it is of non-conducting nature and does not require special insulation where a metallic support is used.

Having thus described my invention, what I claim is—

The combination in a thermostat, of a base-plate 10, a pair of oppositely-disposed plates 11 and 12 carried by the base, adjustable contact-screws carried by said plates 11 and 12,

a plurality of binding-posts having independent connections with said plates, a lever 22 pivotally mounted at a point intermediate of its ends on the bed-plate and provided with pointed end portions facing in opposite directions and disposed between the two contact-screws, said lever being electrically connected to a third binding-post and adapted to close circuits by contact with one or other of the screws, and an elongated bar or strip of soft rubber secured at one end to the base and connected at its opposite end to the lower end of the contact-lever, the intermediate portion of the bar being movable independent of the base and free to expand and contract under thermostatic changes.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY WM. GERMINER.

Witnesses:

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