

A. N. OZIAS.
TEMPERATURE REGULATOR.
APPLICATION FILED JULY 20, 1910.

998,117.

Patented July 18, 1911.

Fig. 1.

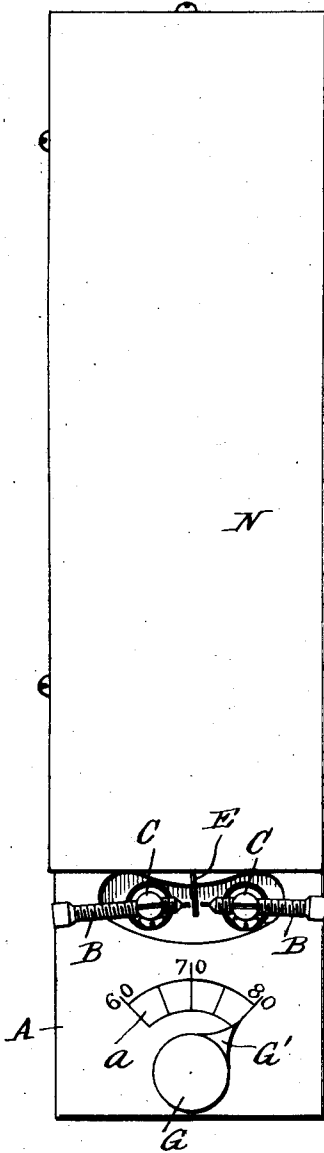


Fig. 2.

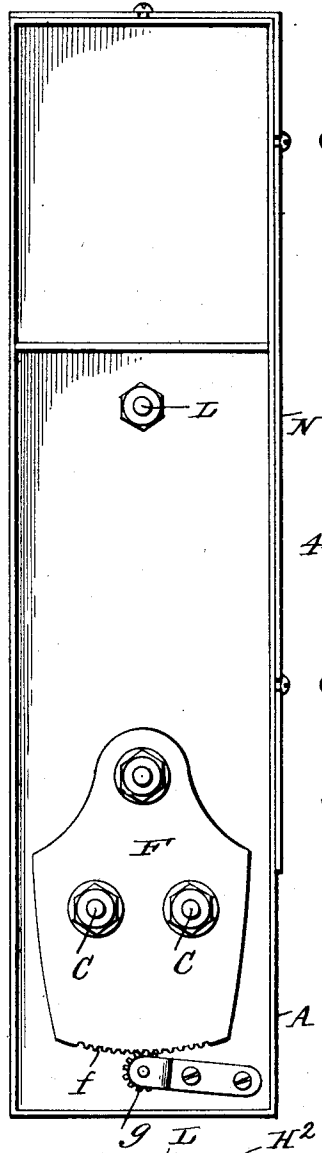


Fig. 3.

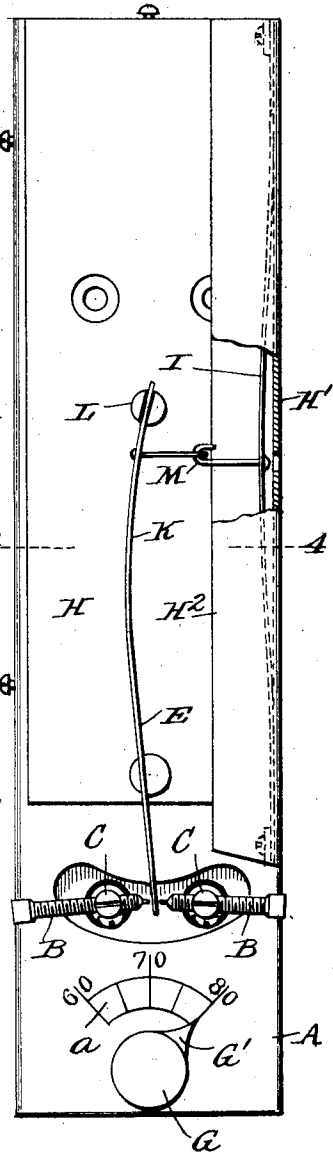
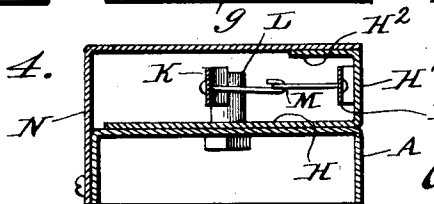


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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TEMPERATURE-REGULATOR.

998,117.

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To all whom it may concern:

Be it known that I, ALBERT N. OZIAS, of Minneapolis, in the county of Hennepin, State of Minnesota, have invented a certain new and useful Improvement in Temperature-Regulators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to thermostats such as are primarily designed for controlling electric circuits, whereby motor mechanism may be operated for regulating temperature conditions in apartments, etc., although features of the invention are applicable in apparatus designed for the direct control of valves, dampers or the like for effecting temperature regulation.

The invention consists in certain novel details of construction and combinations and arrangements of parts all as will be now described and pointed out particularly in the appended claims.

Referring to the accompanying drawings—Figure 1 is a front elevation of a thermostat embodying the present invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a front elevation with the casing removed and a part of the rigid member broken away. Fig. 4 is a section on the line 4—4, Fig. 3, looking upwardly.

Like letters of reference in the several figures indicate the same parts.

The letter A indicates the base of the instrument preferably recessed on the rear face as shown in Fig. 2 to provide spaces for the adjusting mechanism of the terminals, wire connections, etc. The circuit terminals B are preferably in the form of screws adjustably clamped in posts C and project toward each other for coöperation with the arm E, controlled by the thermostat members to be presently described. Said posts are mounted on a quadrant or sector F pivoted in the base and having a toothed periphery *f* with which meshes a pinion *g* controlled by a button or finger piece G provided with a pointer G' adapted to register with a temperature scale *a* on the base. The posts are electrically insulated from the sector and base and are adapted for the attachment of circuit wires leading off to a motor or other appropriate device for opening and closing valves, dampers or

other devices for cutting off or admitting more or less heat to the apartment or chamber where the instrument is located.

The thermostatic members comprise a member which is rigid and has a high coefficient of expansion and a member having a low coefficient of expansion but capable of deflection intermediate its ends. The rigid member is preferably sheet brass or other metal having the characteristic mentioned and is formed or bent into shape with a bottom plate H adapted to be secured flat upon the face of the base A, a perpendicular wall H' and an overhanging wall H² which is substantially parallel with the bottom plate. The rigid member it will thus be seen is in the form of a bottom plate with an overhanging projection along one edge. The flexible member is mounted in this projection and is preferably in the form of a steel ribbon I having its ends anchored firmly to the ends of the projection and adapted to have its tension increased or decreased by the expansion or contraction of the rigid member.

A spring (such as K) connected with the center of the flexible member tends to normally deflect or bow said member and the circuit control arm E which may also be an indicator is connected so as to be swung in unison with the center of the member.

In the simple embodiment of the invention illustrated, the arm E forms the outer end of a flat or leaf spring K mounted in a post L on the bottom plate and preferably angularly adjustable to set or vary the tension of the spring. At a point close to the post the arm or spring is connected by a jointed link M with the center of the flexible member.

The working parts are inclosed by a cover or casing N having walls on three sides the other inclosing side being formed by the vertical wall H' of the rigid member which is thus freely exposed to the atmospheric temperature whereby the rigid member will respond promptly to any changes in temperature and effect a close regulation of the heat supply.

The whole device is exceedingly simple, the parts may be easily constructed of stock materials and of uniform size and form for practically any system of regulation. It has the capacity for universal adjustment to adapt it for any situation but is especially adapted for situations where the regula-

tion is desired within a few degrees of any predetermined normal.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a thermostatic temperature regulator the combination with a control arm adapted to be moved by changes in temperature, of thermostat members embodying a supporting plate having a projection along one edge and formed of material having a high coefficient of expansion, a flexible member having a low coefficient of expansion with its ends anchored to said projection and a connection between the center of said flexible member and control arm the flexible member being maintained under pressure tending to deflect the same transversely.

2. In a thermostatic temperature regulator the combination with a base, circuit terminals adjustably mounted on the base and a control arm movable between said terminals, of a rigid member having a bottom plate secured to the base and an overhanging projection along one edge said plate having a high coefficient of expansion, a flexible member having a low coefficient of expansion with its ends anchored in the projection and a connection between the flexible member and control arm.

3. In a thermostatic temperature regulator the combination with a base, circuit terminals adjustably mounted on the base and a control arm movable between said terminals, of a rigid member secured to the base and having an external wall perpendicular to the base, a flexible member having its ends anchored to the ends of the rigid member, a connection between the flexible member and control arm and a cover having an open side adapted to be closed by the perpendicular wall of the rigid member.

4. In a thermostatic temperature regulator, the combination with a base, circuit terminals adjustable on the base and a control arm movable between said terminals, of a rigid member having a bottom plate secured to the base and an overhanging projection extending upwardly from said plate at one edge, a flexible member having its ends anchored in said projection, a support for the control arm mounted on the base, a jointed connection between the arm and flexible member and a cover having an open side through which a wall of the rigid member is exposed.

ALBERT N. OZIAS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."