

No. 774,847.

PATENTED NOV. 15, 1904.

M. J. LEVY.
THERMOSTAT.

APPLICATION FILED FEB. 13, 1904.

NO MODEL.

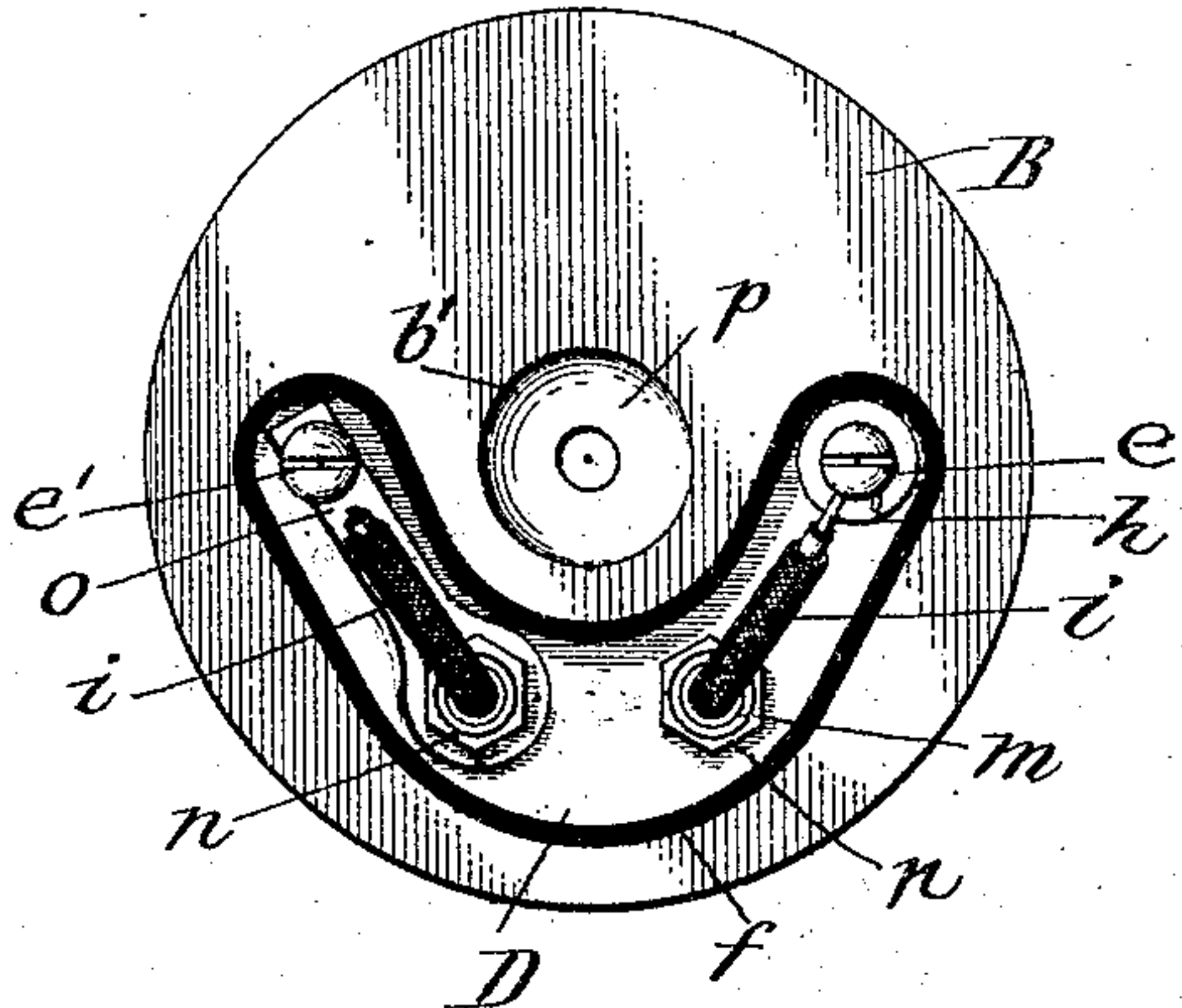


Fig. 1.

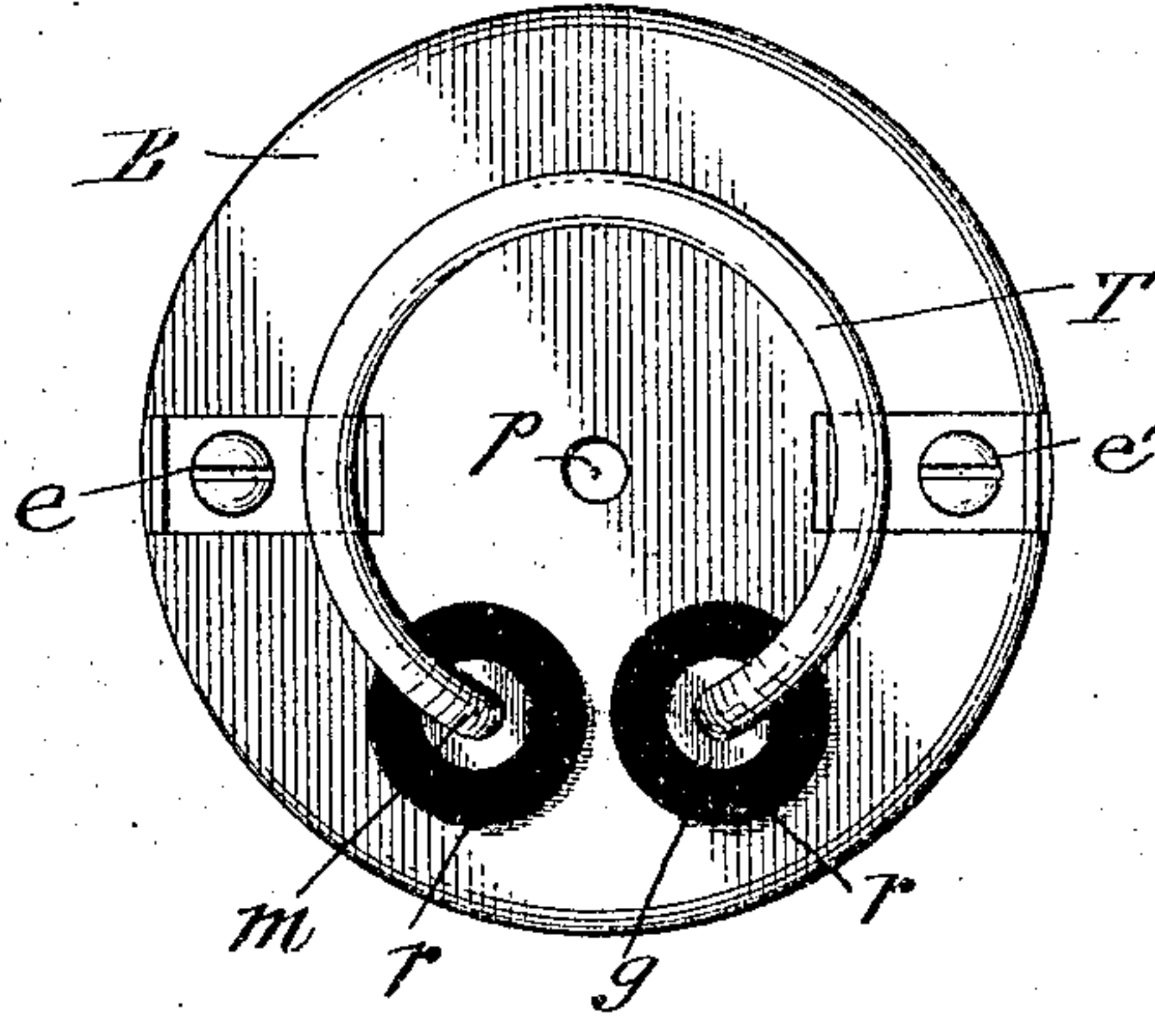


Fig. 2.

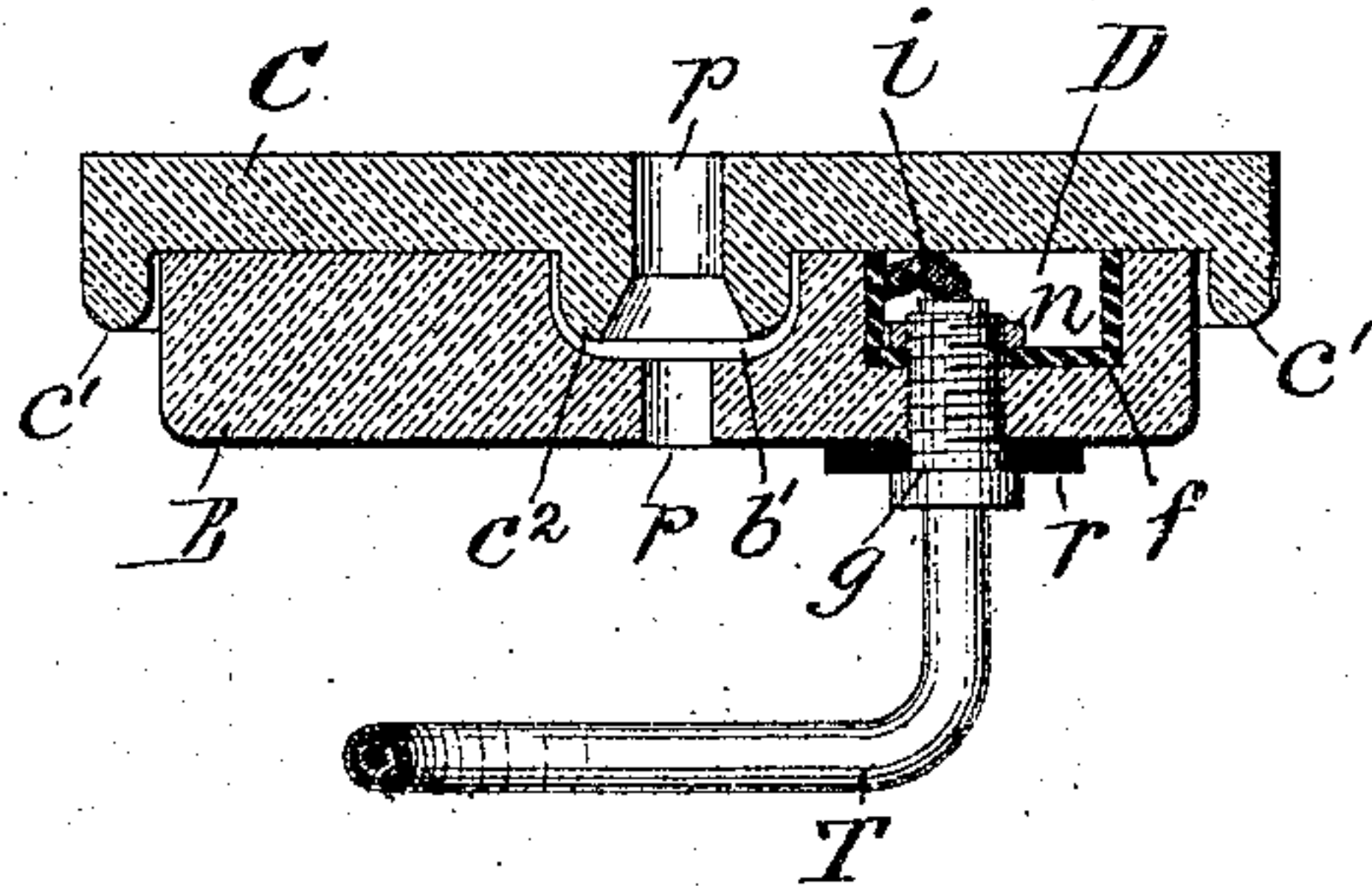


Fig. 3.

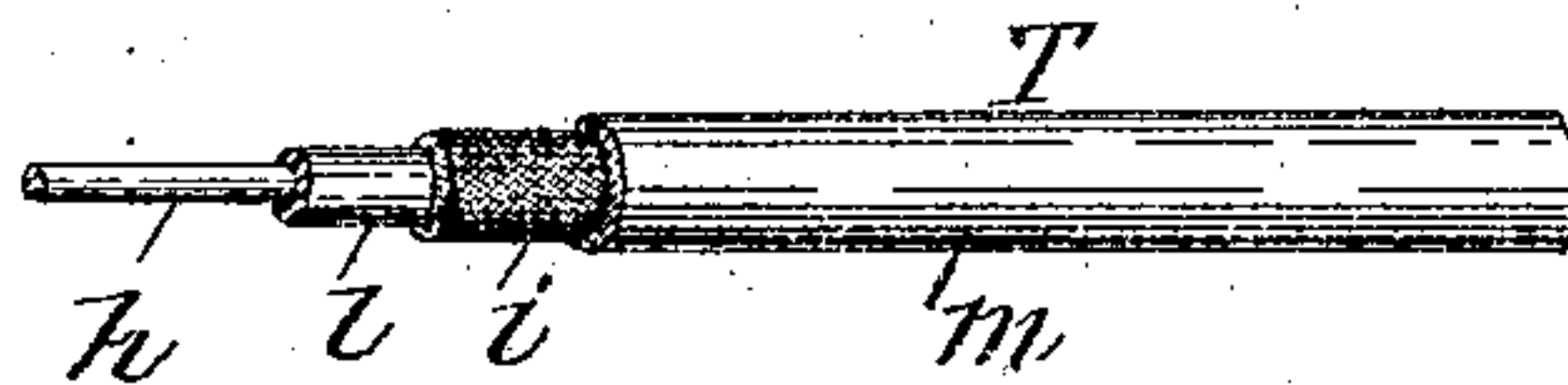


Fig. 4.

WITNESSES:

Frank G. Parker,
John Buckler,

INVENTOR=

Max J. Levy,
By Reuben L. Roberts,
Atty.

UNITED STATES PATENT OFFICE.

MAX J. LEVY, OF NEW YORK, N. Y., ASSIGNOR TO JOHN D. GOULD, OF
NEW YORK, N. Y.

THERMOSTAT.

SPECIFICATION forming part of Letters Patent No. 774,847, dated November 15, 1904.

Application filed February 13, 1904. Serial No. 193,404. (No model.)

To all whom it may concern:

Be it known that I, MAX J. LEVY, a citizen of the United States of America, residing in the city of New York, in the county and State of New York, have invented certain new and useful Improvements in Thermostats for Fire-Alarm Circuits, of which the following is a specification.

The invention relates to thermostats for use in fire-detecting circuits and the insulating blocks or bases in which the thermostatic section is connected with the circuit-conductors, and is an improvement upon the construction shown and described in Letters Patent No. 733,184, dated July 7, 1900, and granted to John D. Gould; and the improvements consist in a cable composed of an inner conductor, either of a metal of low fusing-point alone or of contiguous strips of metal respectively of relatively high and low fusing-points, a relatively porous insulating-covering for this inner conductor, and the whole enveloped in an exterior metallic tubular conductor of relatively high fusing-point; also, in a base provided with metallic terminals for the circuit-conductors, and a recess or chamber in which one end of each of the two conductors of a thermostatic section of such cable may be connected to the respective terminals, and a cap for the base, portions of which cap overlap the edges of the base or project into depressions around the openings through which its fastening devices pass for the purpose of preventing moisture from entering the chamber containing the exposed ends of the thermostatic section.

The invention will be understood from the following description and accompanying drawings, wherein—

Figure 1 is a plan of the inner or covered side of the base, showing the chamber in which the ends of the conductors of the thermostatic section are connected with the terminals. Fig. 2 is the outer side of the base, showing the thermostatic section of cable as a short curved piece with the ends passing through insulating-pieces set in the base and also the portions of the metallic terminals to which the circuit-conductors are to be connected.

Fig. 3 is a sectional elevation through the base and its cap, on a line passing through the insulating-piece for one end of the thermostatic section, and central opening for a fastening-screw. Fig. 4 is a piece of the thermostatic cable with a small portion of its several component parts exposed to view.

Referring to the drawings, T is a section of the improved thermostatic cable, composed of an inner conductor *h*, of metal of relatively high fusing-point—copper wire, for instance—surrounded by or in contact with a strip of metal *l* of relatively low fusing-point, an insulating-covering *i*, of relatively porous structure and of material readily dissociated by heat, and a metallic tubular conductor *m*, which envelops the whole.

The inner conductor, with its insulating-covering, should be made of a size to closely fit the interior of the tube *m*, into which it is drawn when the tube is sufficiently warm to soften the exterior of the insulating-covering *i*, and thereby seal it within the tube.

B is the base for the thermostat, and C its cap, and the two preferably should be composed of an insulating material. Porcelain will be found economical and convenient for the purpose.

D is the recess or chamber in the base where the ends of the two conductors *h* and *m* of the thermostatic section T are respectively connected with the metallic terminals *e e'*. It will be found advantageous to line the chamber D with insulating material *f*.

The ends of the tube *m* of the thermostatic section T may be soldered into bushings *g*, screw-threaded at their outer ends, and these bushings inserted through insulating-rings *n* within holes in the base B, and by means of a nut *n* screwed onto the end of the bushing the thermostatic section will be properly secured to the base. As will be seen in Fig. 1, the inner conductor *h* of the thermostatic section is uncovered and connected with the inner end of the terminal *e*, while the outer tubular conductor *m* of that section is connected with the terminal *e'* by means of a metal strip *o*, which extends from one to the other within the chamber D. The circuit-conductors

are connected to the terminals $e e'$ upon the outside of the base B, which are shown in Fig. 2.

The base of the thermostat is usually attached to the ceiling of a room in the position shown in Fig. 3, and if used without a cap or with a plain flat cap of the same peripheral dimensions as the base moisture from above the base is liable to find its way between the cap and base and into the chamber D either at their edges or by way of the holes through which the screws or other devices pass by which the base and cap are fastened to the ceiling. To obviate this, the cap is constructed with an overhanging lip c' at its outer edge and around the hole p for the fastening-screw with a projecting lip c'' . The lip c' projects down over the outer edge of the base B and the lip c'' into a depression b' in the base formed around hole p for the fastening-screw. It will be readily seen, therefore, that any moisture sufficient to run upon the top of the cap C will be conducted by the lips $c' c''$ below the upper surface of the base and off from the edge of the lip c' or from the lip c'' down through the hole p in the base and keep the chamber D entirely free.

A great advantage of the construction in this improved thermostat over those heretofore in use is that the second or outer conductor is a tube of metal with some part of which the metal of low fusing-point must of necessity make contact whenever it is melted and forced through its porous covering. Also this metal tube is not easily broken nor torn from the interior portion of the cable. It also serves as a means by which the cable may be readily and securely attached to the base of the thermostat, and the construction of the base itself prevents the exposed ends of the thermostatic section from being injured by moisture and the two conductors short-circuited thereby.

I claim—

1. An electric cable for fire-detecting or thermostatic alarm-circuits, consisting of an

inner conductor of low-fusing metal, a relatively porous insulating-covering thereon, and an exterior enveloping metallic tubular conductor of relatively high fusing-point.

2. An electric cable for fire-detecting or thermostatic alarm-circuits, consisting of an inner conductor composed of contiguous strips of metal respectively, of relatively high and low fusing-points, a covering for the inner conductor which covering is of insulating material readily dissociated by heat, and an enveloping metallic tubular conductor of relatively high fusing-point.

3. A thermostatic section in a fire-detecting circuit, consisting of an inner conductor of low-fusing metal, an insulating-covering thereon, an enveloping metallic tubular conductor of relatively high fusing-point, and one or more insulating-blocks in which the ends of the low-fusing conductor are sealed, which blocks have metallic terminals, each of which is adapted for electrical connection with one of the conductors of the thermostatic section and one of the circuit-conductors.

4. In an electrical thermostat provided with two conductors normally insulated from each other, an insulating block or base provided with an interior recess for the exposed ends of the conductors, and a cap for the base provided with means substantially as described, to prevent moisture from entering the recess in the base.

5. In an electrical thermostat provided with two conductors normally insulated from each other, a base provided with an interior chamber for the exposed ends of the conductors, and depressions, as b' , around the openings for its fastening devices, and cap for the base provided with projections, as c' , around the openings for its fastening devices for the purpose described.

MAX J. LEVY.

Witnesses:

MAURICE DEICHES,
HENRY L. WASHBURN.