

No. 661,732.

Patented Nov. 13, 1900.

R. G. CALLUM.
THERMOSTATIC DEVICE.

(Application filed Jan. 9, 1900.)

(No Model.)

Fig. 1.

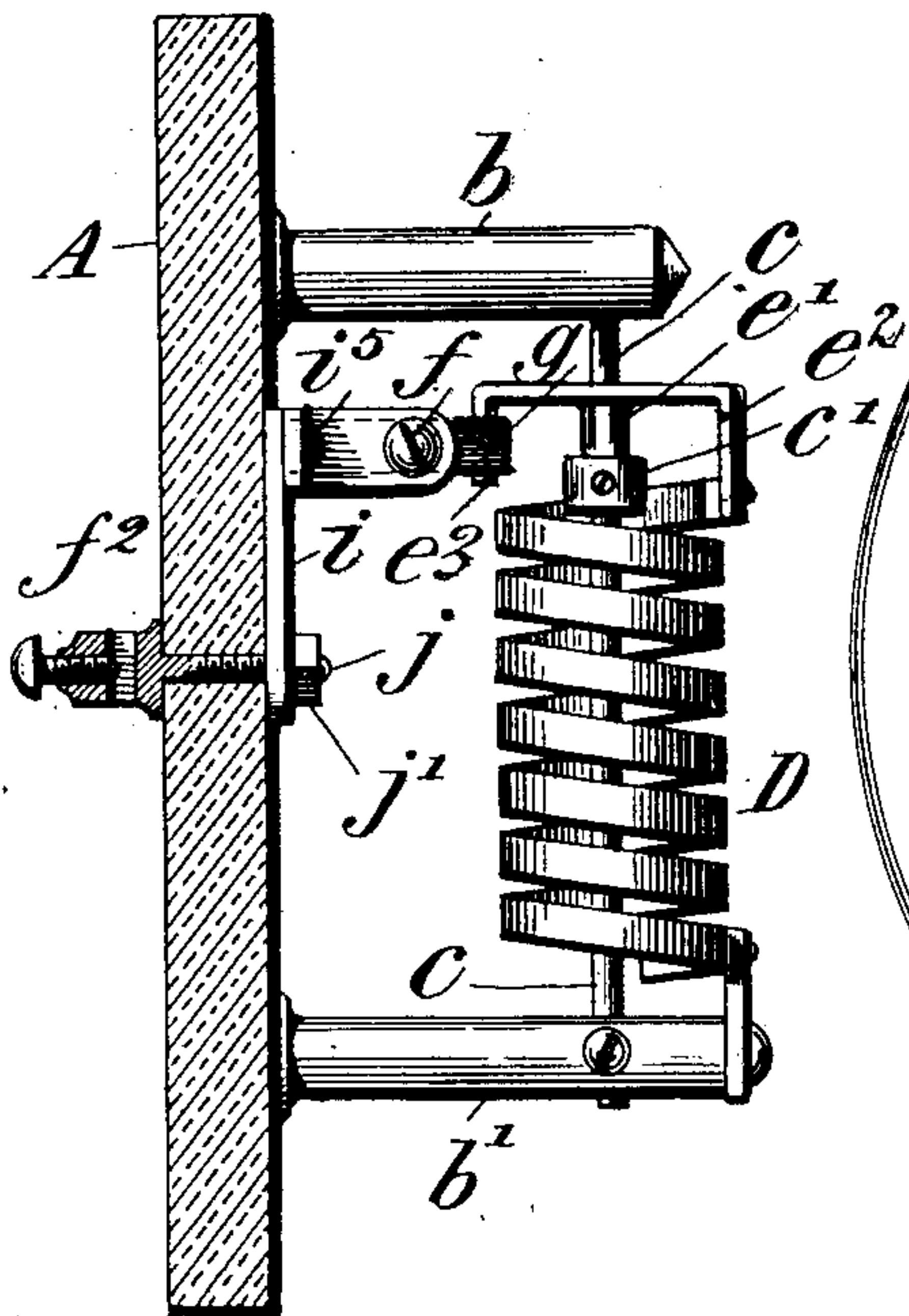


Fig. 3.

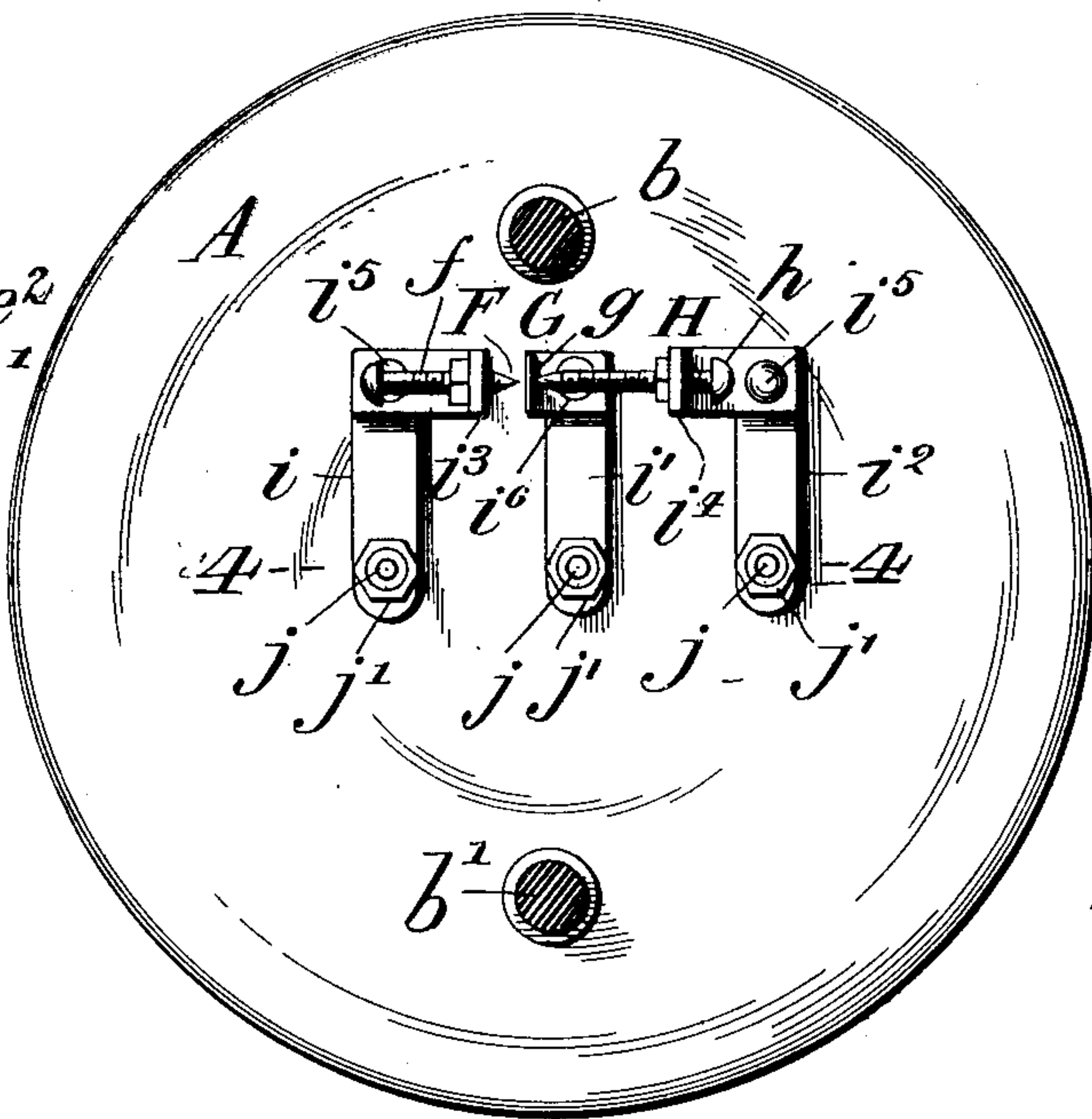


Fig. 2

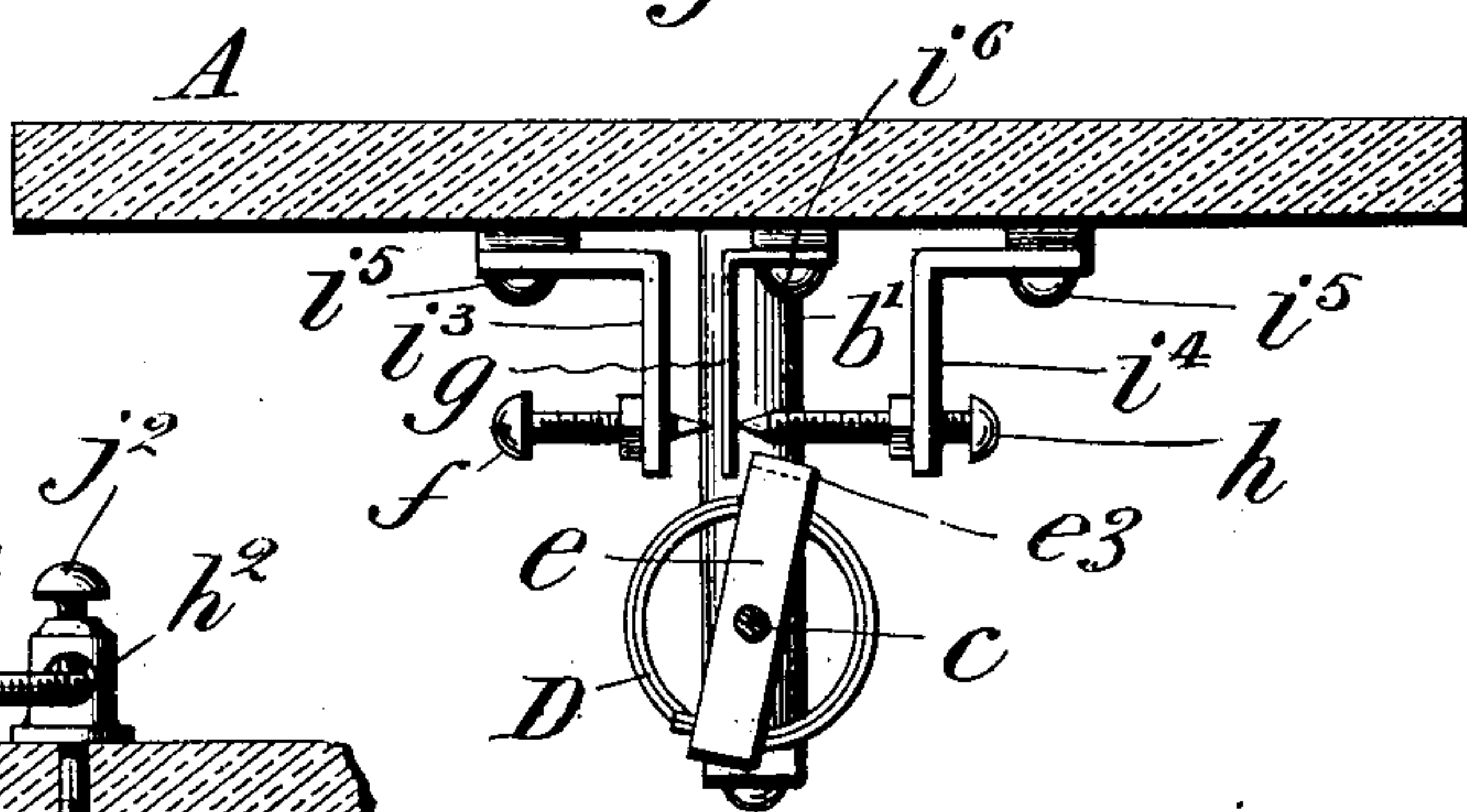
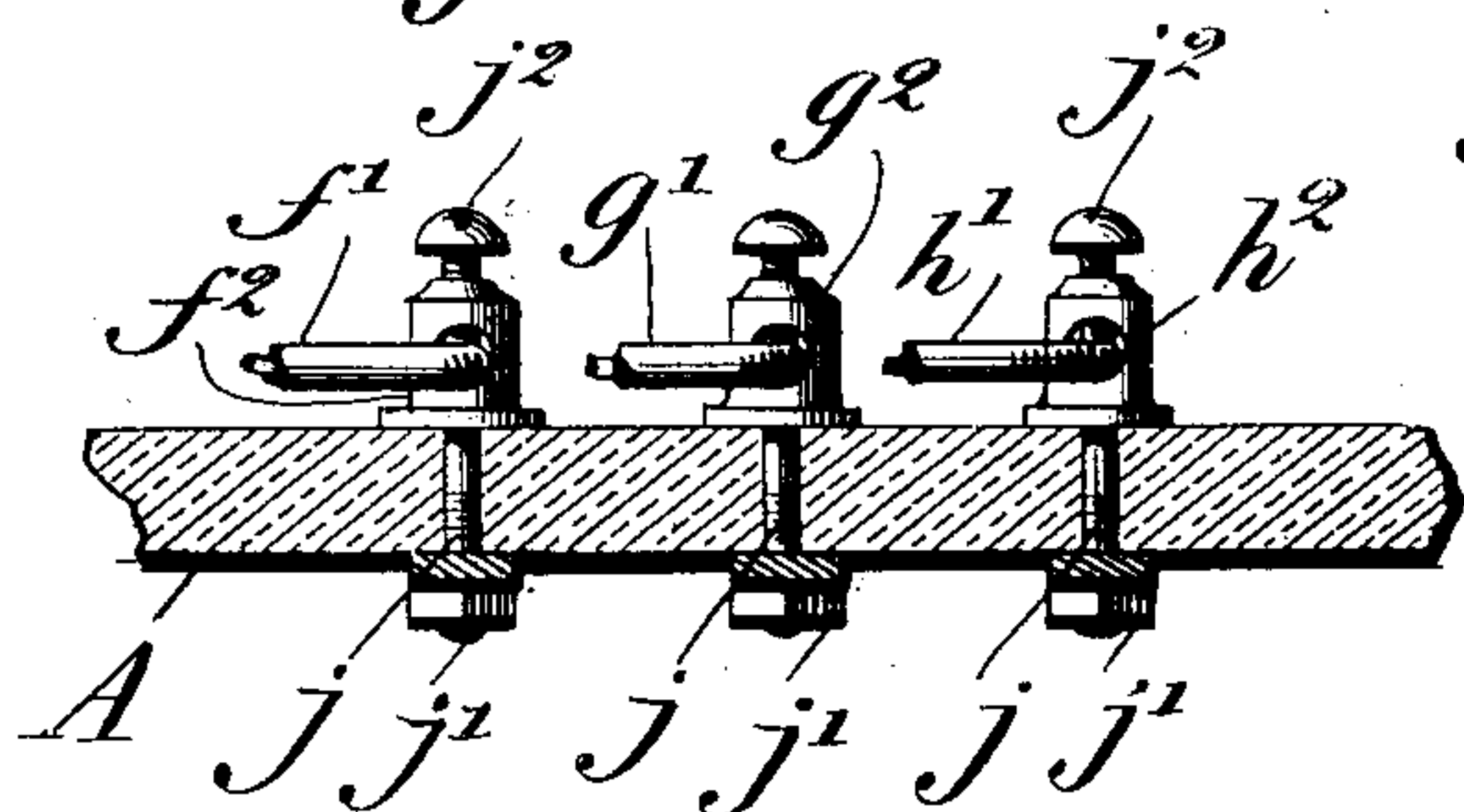


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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THERMOSTATIC DEVICE.

SPECIFICATION forming part of Letters Patent No. 661,732, dated November 13, 1900.

Application filed January 9, 1900. Serial No. 804. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. CALLUM, a citizen of the United States, residing at 1401 F street northwest, Washington, District of Columbia, have invented certain new and useful Improvements in Thermostatic Devices; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to thermostats, and has for its object the production of an improved thermostatic device which is adapted for employment more especially in connection with fire-alarm and other like systems and which possesses advantages in point of simplicity and durability of construction and of efficiency in operation.

The invention consists in the construction and relative arrangement of parts, as set forth in the following detailed description, which is to be read in connection with the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of a thermostatic device embodying my invention. Fig. 2 is a top plan view, partly in section. Fig. 3 is a front elevation, the thermostatic coil being omitted. Fig. 4 is a sectional view on line 4 4 of Fig. 3.

Referring to the said drawings by letter, A denotes the base-plate, of non-conducting material, to which are attached arms b b' , forming supports for a fixed shaft c . Loosely encircling this shaft is the thermostatic coil D, one end of which is attached to the upturned end of the arm b' , the other end being secured to a rock-arm e . This rock-arm, which is of inverted-U form, is loosely mounted on the shaft, being supported by a fixed collar c' through the interposition of a bearing collar or sleeve e' , fixed to the rock-arm. The coil D is secured to the downturned end e^2 of the rock-arm, the other free downturned end e^3 of the latter oscillating through movement of the coil under the action of varying temperatures.

Three contacts are employed in connection with the coil and circuit. These contacts are

respectively lettered F, G, and H and are attached to the upper ends of plates i i' i^2 , which are pivoted at their lower ends on threaded bolts j j j , whereby movement of the contacts for the purpose of adjustment is permitted. The adjusted positions of the plates and contacts are maintained by means of binding-nuts j' , which are screwed on the bolts against the plates. The outer plates i and i^2 carry at their upper ends brackets i^3 i^4 , screws i^5 adjustably securing the plates and brackets, and through the outwardly-extending portions of these brackets are passed contact-screws respectively lettered f h . The inner or contact ends of these screws are tapered, and at the outer ends are slotted heads to permit of the screws being readily turned for adjustment. To the upper end of the inner plate i' is secured, by means of a screw i^6 , a contact g , in the form of an arm, of resilient material, such as sheet metal. This contact g extends outwardly between the contacts f h and into the path of end e^3 of the rock-arm e . In the normal position of the parts the contacts g and h abut and the end of the rock-arm is closely adjacent to the contact g ; so that no engagement of the rock-arm with said contact g takes place until the coil is affected by a certain predetermined temperature. Such normal position of parts precludes the communication of movement through jar or concussion from the coil to the contact g and no false alarm is therefore possible from this cause. Each of the contacts is connected with the circuit, wires f' , g' , and h' being shown as leading from the bolts j , the preferred construction being that shown, which involves the formation of posts f^2 , g^2 , and h^2 integral with the bolts, through which posts are passed binding-screws j^2 .

The device is in practice so set that when the surrounding temperature shall have reached, say, 110° the movement of the expanding thermostatic coil will have been sufficient to have carried the contact g away from the contact h , the result being that the normally-closed circuit through these contacts becomes broken, the breakage in the circuit being employed to operate an indicator, annunciator, or the like, which will show that the heat has reached the danger-point. In the event that the temperature continues to

rise further expansion of the coil will cause the contact *g* to be carried against the contact *f*, the result being the closing of a circuit in which is a fire-alarm signal giving
 5 notice of the existence of a fire temperature in the place where the device is located. Inasmuch as the device is normally in a closed circuit, any disarrangement of the parts or breakage of the wires will cause the circuit
 10 to become broken, so that the condition will become known the instant the accident occurs.

The simplicity of the device precludes disorder even under extraordinary usage and the liability to false alarms is the minimum.
 15 The device, moreover, is constructed to instantly respond to changes in temperature, thereby insuring efficiency in operation.

I claim as my invention—

20 A thermostatic device comprising a thermostatic coil encircling a fixed shaft, a rock-

arm loose on the shaft and connected at one end to the coil, two contacts each of which is a screw carried by an adjustably-mounted bracket, and a spring-contact adjustably supported between the aforesaid contacts and
 25 normally held against one of them to provide a closed circuit, the end of the intermediate contact being in the path of but disengaged from the rock-arm and adapted in the movement of the arm to be carried away from the
 30 one contact to break the normally-closed circuit and against the other contact to establish a second circuit.

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

ROBERT G. CALLUM.

Witnesses:

W. TAYLOR,
 R. E. WINTERS.