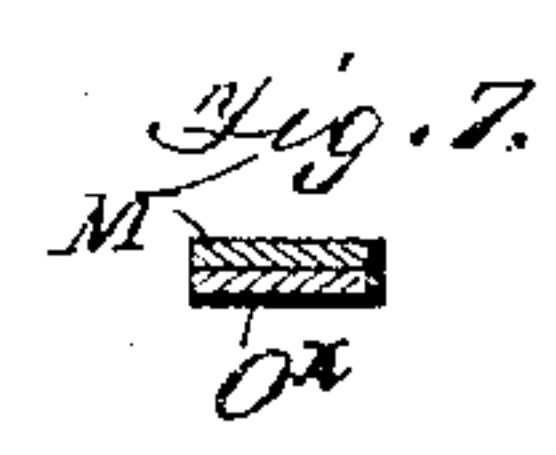
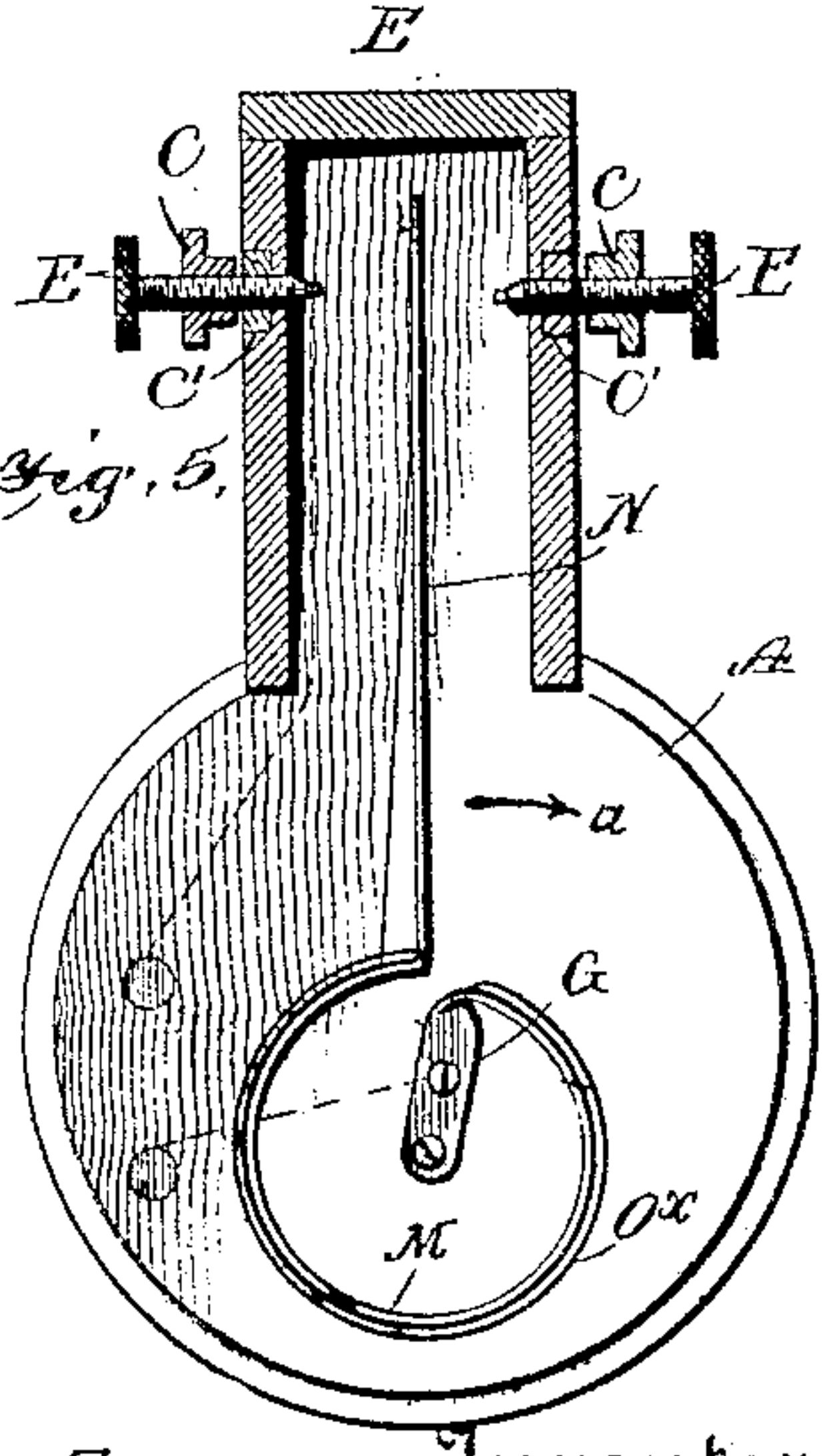
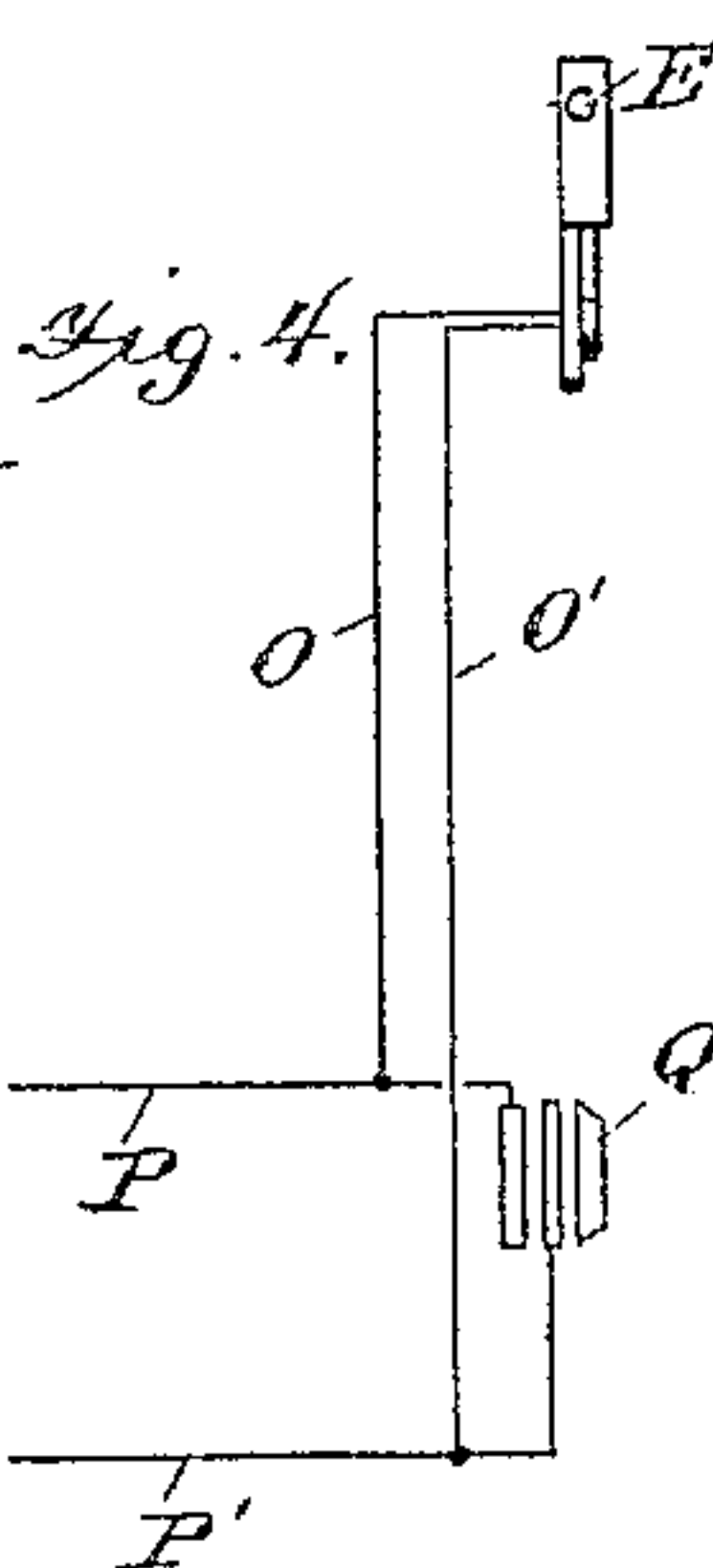
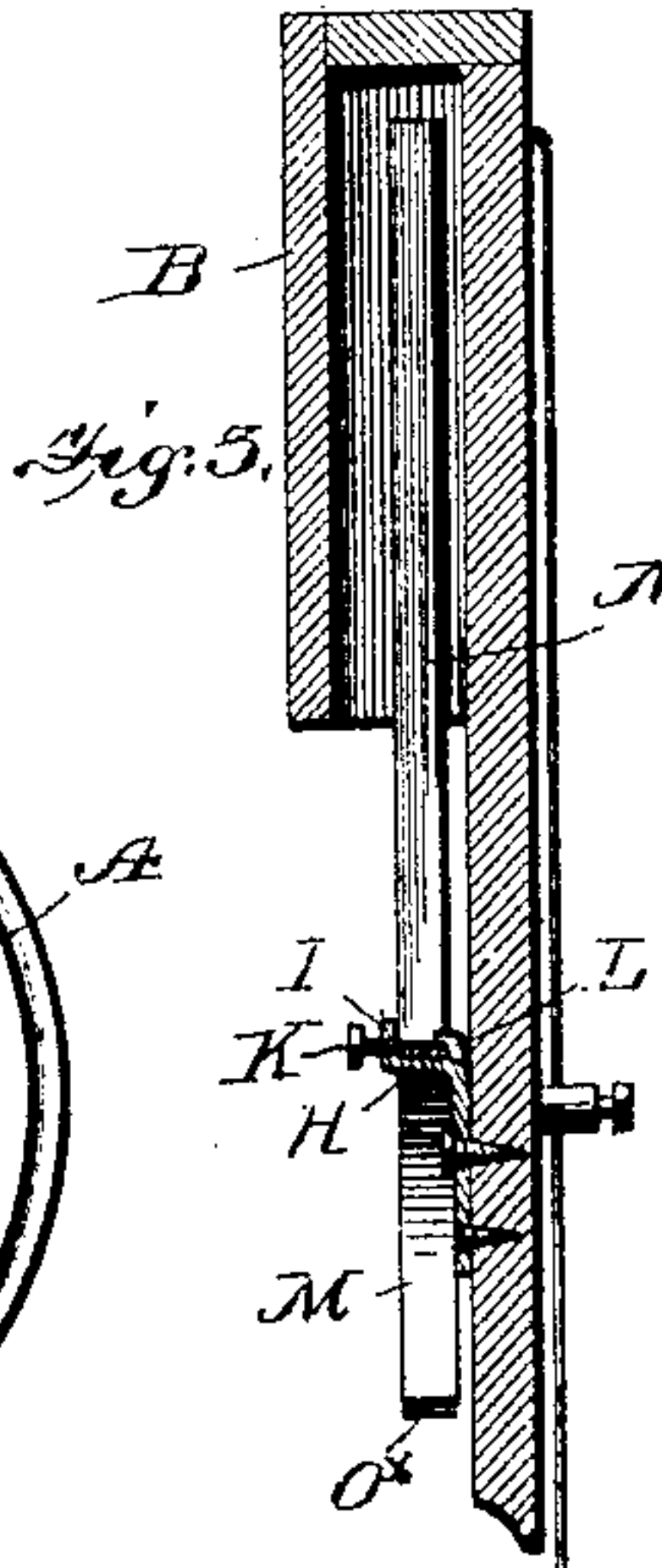
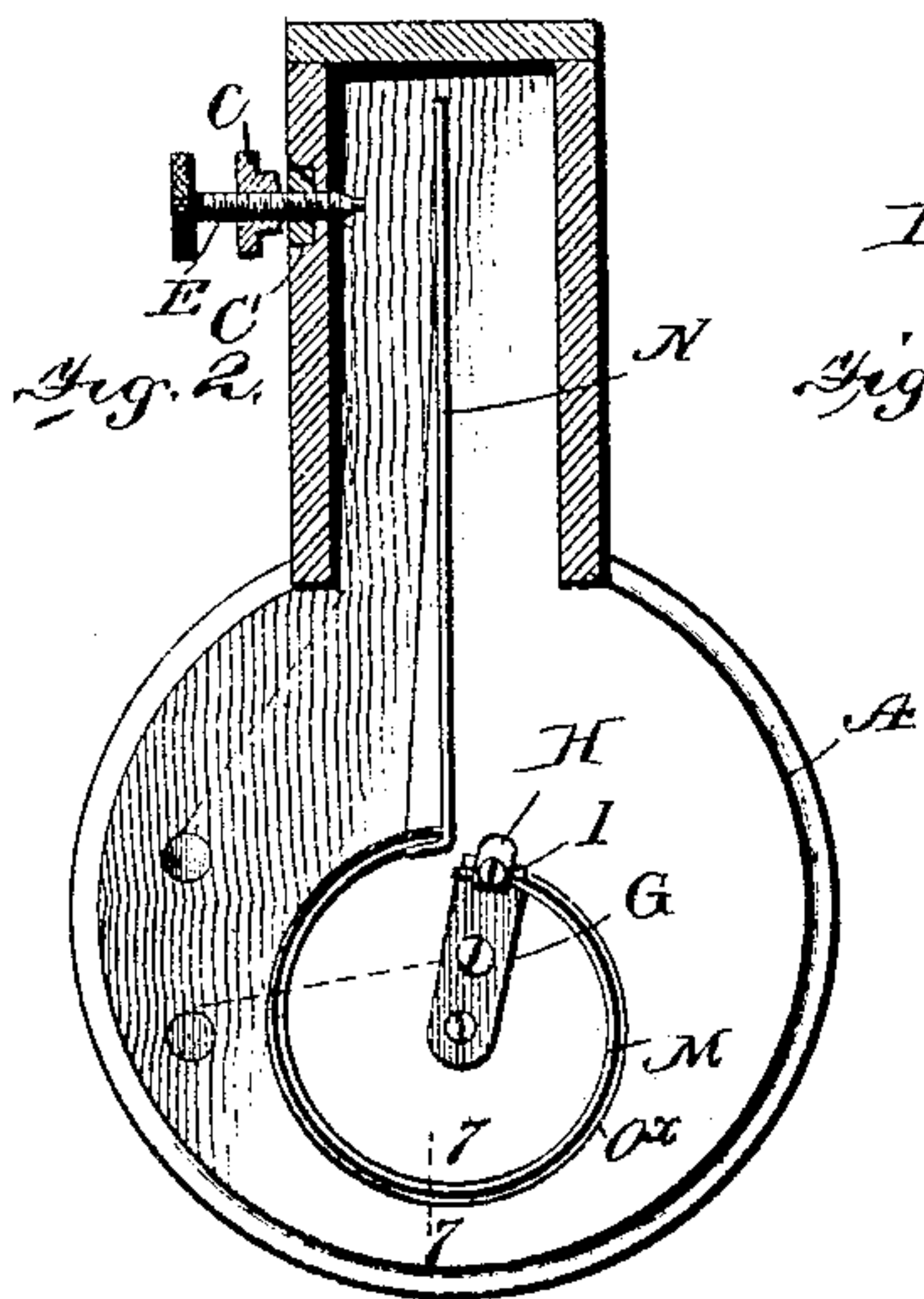
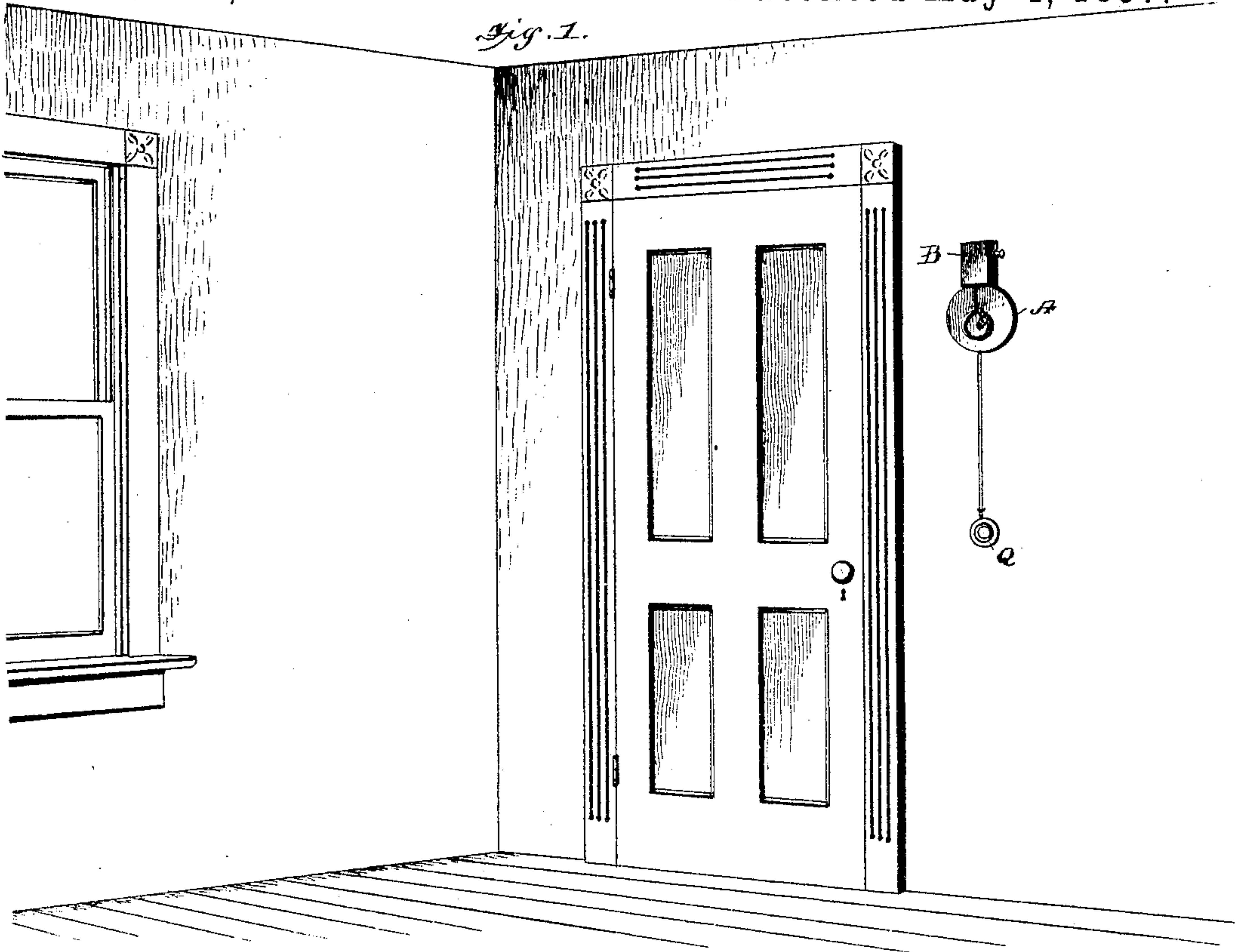


(No Model.)

G. B. RILEY.  
AUTOMATIC FIRE ALARM.

No. 582,093.

Patented May 4, 1897.



Witnesses  
G. B. Riley  
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*Fig. 6.*  
7 N

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By  
Thurston  
Attorneys



# UNITED STATES PATENT OFFICE.

GEORGE B. RILEY, OF KAHOKA, MISSOURI.

## AUTOMATIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 582,093, dated May 4, 1897.

Application filed August 19, 1896. Serial No. 603,263. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. RILEY, residing at Kahoka, in the county of Clark and State of Missouri, have invented a new and Improved Automatic Fire-Alarm, of which the following is a specification.

This invention relates generally to fire-alarms, and more particularly to an improved automatic fire-alarm, the object being to provide a cheap and simple device which can be arranged for hotels, factories, and other buildings containing a large number of rooms, said alarm devices being connected electrically with any suitable form of annunciator mechanism, whereby when the temperature within any certain room gets beyond a certain predetermined point the alarm will be sounded in the central or main office, showing exactly in which room there is an excessive degree of heat.

Another object of the invention is to provide a fire-alarm device which can be quickly and easily arranged in a hotel or other building having a system of push-bell circuits for the separate rooms, said fire-alarm device being connected with the push-bell circuit, thereby avoiding the necessity of stringing separate circuits for the fire-alarm device and at the same time saving a great deal of time, labor, and money.

Another object of my invention is to provide an automatic device which will be operated to close a circuit whenever the temperature of the room in which the circuit-closing device is located gets beyond a certain point, and another object of my invention is to arrange said circuit-closing device with two contact-points, whereby the circuit will be closed either by an excessive degree of heat or an excessive degree of cold, thereby rendering the device particularly applicable to green-houses and the like, where a uniform or average temperature is absolutely necessary.

Another object of my invention is to provide an automatic fire-alarm device of the kind described which shall be exceedingly cheap and simple in construction and absolutely secure in operation.

Another object is to provide a protecting-cover of the contact points and arm, whereby dust, dirt, and the like will be prevented from accumulating upon the points and whereby

the efficiency of the device is greatly improved and prolonged.

With these various objects in view my invention consists, essentially, in supporting a sensitive circular spring upon a base-plate of non-conductive material rigidly connecting an arm to the free end of the said circular spring, said spring being of such a nature as to readily expand and contract by the rise and fall of temperature, whereby the arm is vibrated and adapted to contact with a point connected with a bell-circuit, the fixed end of the circular spring being connected with the same circuit, whereby as the spring expands and causes the arm to contact with the point the bell will be sounded and indicate exactly which room is in danger.

The invention consists also in arranging a protecting-hood upon the end of the vibrating arm and contact-points, whereby said arm and points are protected from dust, dirt, &c.

My invention consists also in certain details of construction and novelties of combination, all of which will be fully described hereinafter and pointed out in the claim.

In the drawings forming a part of this specification, Figure 1 is a view showing my invention in use and arranged in a room of a hotel directly above the push-button. Fig. 2 is a face view of the device complete and ready for attachment to the wall. Fig. 3 is a similar view showing the cap removed and also showing a slight modification in construction. Fig. 4 is a sectional view upon the line 4 4 of Fig. 2. Fig. 5 is a detail diagrammatic view showing the manner of connecting the fire-alarm device with the push-button circuit. Fig. 6 is a section of the arm N. Fig. 7 is a section of the spring M and O<sup>x</sup>.

In carrying out my invention I employ a base-board A, constructed of wood or other suitable material, the upper portion being essentially rectangular in shape, while the lower portion is preferably circular in shape.

A box-like cap or hood B is arranged upon the upper end of the base-board A and is closed at its upper end and open at the lower end, as most clearly shown.

A perforated metallic plate C is arranged in the opening C', produced in the side of the hood or cap, and passing through the said plate is a binding-screw C, through which



works a contact-point E, the inner end thereof being pointed with platinum to prevent corrosion.

A metallic plate G is arranged in the center of the lower portion of the base-plate, and at one end of said plate is arranged an arm II, having an overlapping end I, through which passes a binding-screw K.

Forwardly-projecting lips L are arranged at the end of the plate G, and between the end I and the lips L, I secure one end of a circular spring M, said spring having an arm N integral therewith, which arm is preferably made angular in cross shape to render the said arm stiff and to prevent undue vibration from jars and the like.

The circular spring M and the integral arm N are preferably made of brass, and brazed upon the exterior of the circular spring is a steel spring O<sup>x</sup>, whereby sensitiveness of the circular brass spring is increased and likewise the accuracy of the device.

The contact-arm H extends upward into the hood or cap and is preferably provided with a platinum point to prevent corrosion.

The wire O extends from the contact-point E, and a wire O' extends from the contact-plate, said wires O and O' connecting with the push-bell wires P and P'.

The push-button Q, together with the wires P and P', are usually found in most of the larger hotels in each room, and in order to place my device in the said room it is only necessary to secure the base-board carrying the operative mechanism to the wall, and then connect the wires O and O' to the wires P and P' of the push-button circuits. The contact-point E is then set at any desired point, so that the contact-arm will come in contact therewith when the temperature reaches the said point or goes beyond the same. Thus in case the limit is 110° it will be seen that if the room should become heated beyond that point the circular spring will expand, causing the contact-arm to move in the direction of the arrow *a* and contact with the point E, thereby closing the circuit and sounding the bell in the central or main office, thus notifying the person in charge that there is danger in a certain room, and arrangements can accordingly be made to suppress the fire in the said room.

In Fig. 3 I have shown a slight modification in which the contact arm, plate, and operating-spring are all made in one piece, and

in addition to this modification I employ a second contact-point E, which can be regulated so that the circuit will be closed and the bell sounded whenever the temperature falls below a certain point, thus rendering the device particularly useful in greenhouses and the like, where a certain average temperature is needed.

The device is exceedingly cheap and simple, and by means of the protecting hood or cap the contact-points will be kept free from all dust and dirt, and the efficiency of the device prolonged and increased.

By having the contact-points adjustable the device can be set and sound the alarm at any predetermined temperature. Furthermore, the device can be readily attached to any of the push-bell circuits now in use, and should there be no such circuits the cost for stringing the wires for the purpose of placing my alarm in use will be very small indeed compared with the immense value its use would be, as it can be readily seen that with such a device in each room of a large building and capable of indicating at its central or main point exactly which room is in danger the risk of the fire-insurance company is greatly reduced, and consequently the rate of insurance considerably lowered.

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

The combination with the base-board having a protecting hood or cap at the upper end, of the contact point or points arranged in the side or sides of said protecting hood or cap, the contact-plate attached to the lower end of the base-board, said contact-plate having an arm at one end, said arm having an overlapping portion and the forwardly-projecting lips at the end of the contact-plate, the binding-screw, the sensitive circular spring secured between the overlapping portion of the arm and forwardly-projecting lips with the contact-plate, the contact-arm rigidly attached to the free end of the circular spring and angular in cross-section, all of said parts being arranged and adapted to operate substantially as shown and described.

GEO. B. RILEY.

Witnesses:

CHAS. E. BROCK,  
JAS. L. CRAWFORD.