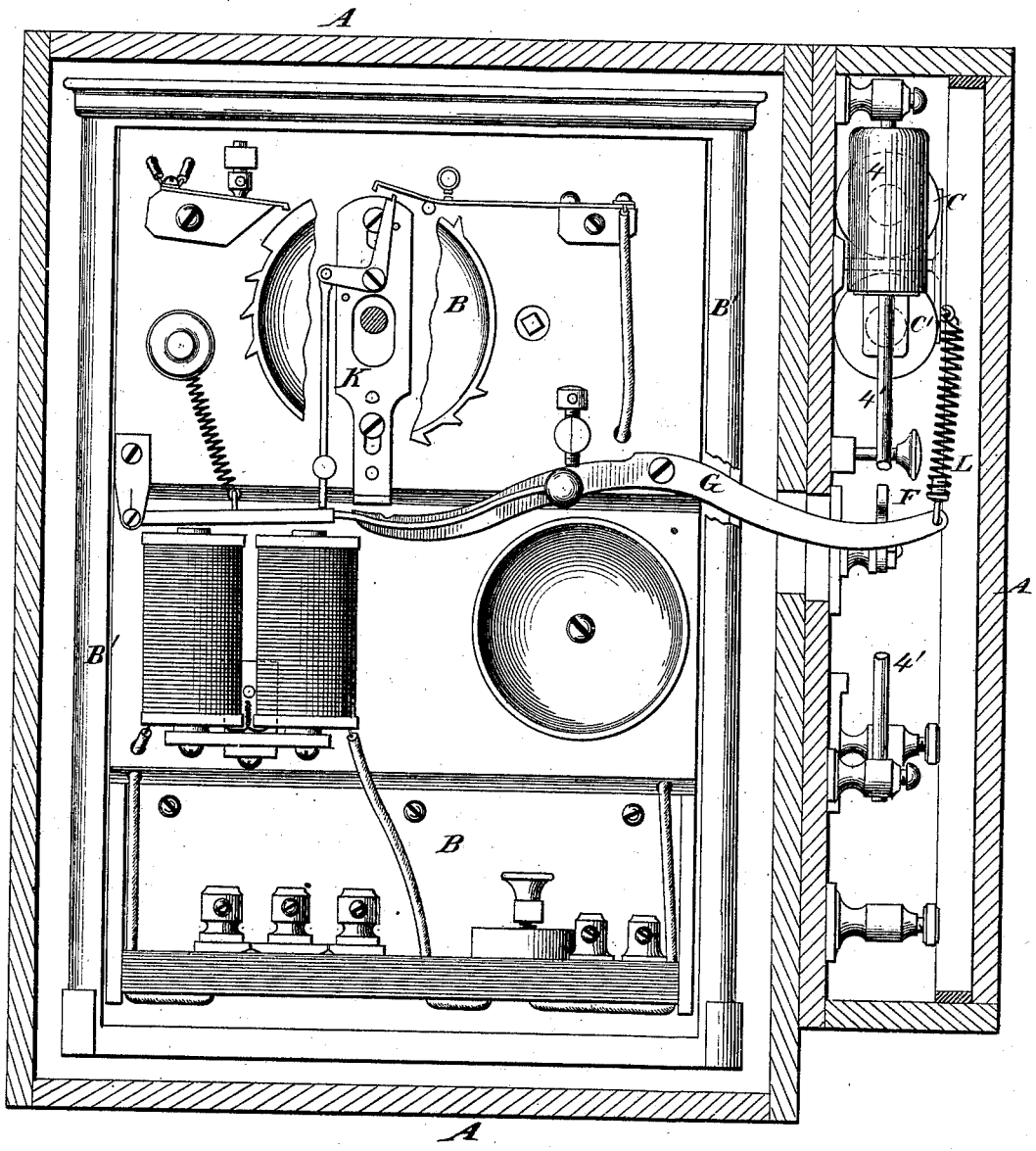
2 Sheets—Sheet 1.

C. H. POND.

Fire-Alarm Telegraphs.

No. 212,819. Patented Mar. 4, 1879.

Fig. 1.



Witnesses.
A. Ruppert,
C. M. Connell

Inventor.
Chester H. Pond
Per Jas. M. Blanchard
Attorney

2 Sheets—Sheet 2.

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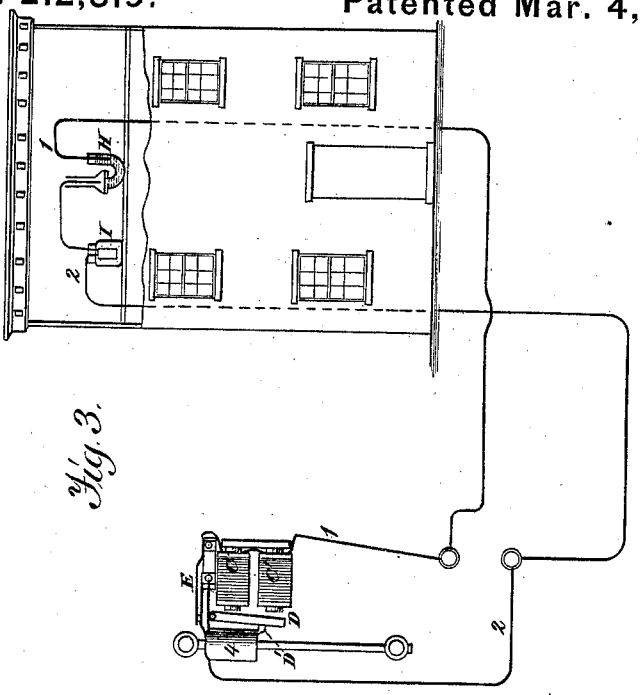

Fig. 3.

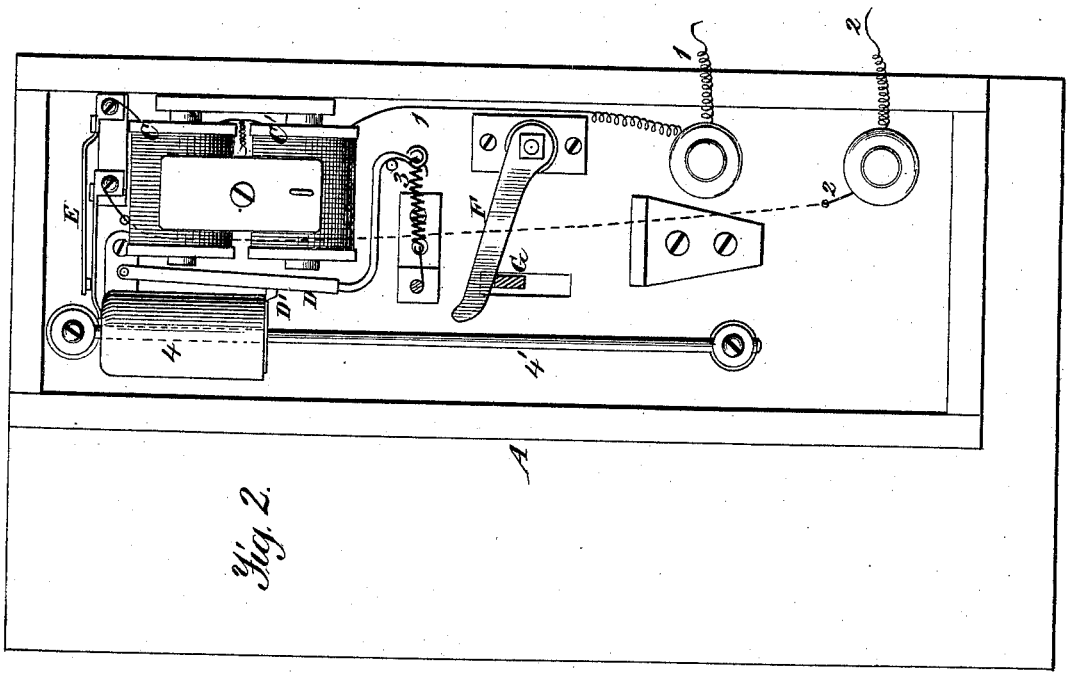

Fig. 2.

Witnesses.
A. Ruppert,
C. M. Connell

Inventor.
Chester H. Pond
Per Jas. M. Blanchard
Attorney

UNITED STATES PATENT OFFICE.

CHESTER H. POND, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-ALARM TELEGRAPHS.

Specification forming part of Letters Patent No. **212,819**, dated March 4, 1879; application filed November 2, 1878.

To all whom it may concern:

Be it known that I, CHESTER H. POND, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Fire-Alarm Boxes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 letters of reference marked thereon, which form a part of this specification—

Figure 1 being an elevation of a fire-alarm box, showing the mechanism for sending in an alarm, and showing also a side view of mechanism for automatically putting the alarm mechanism in operation, with a lever for uniting the two. Fig. 2 is a front elevation of the automatically-operating mechanism connected with the alarm-box, showing a magnet, an armature operated thereby, mechanism for opening and closing the circuit, a weight which is held in its elevated position upon a detent upon the armature, an arm with which the weight comes in contact when the detent is withdrawn from beneath it, a lever which communicates the movement of the weight to the alarm mechanism, and wires for connecting the magnets with a thermostat; and Fig. 3 shows a building having placed in it a thermostat and an open battery, with wires for connecting it with magnets of the automatic mechanism in the alarm-box.

Corresponding letters denote like parts in all of the figures.

This invention relates to fire-alarm boxes, which are used for notifying parties in certain localities that a building or buildings are on fire in certain other localities; and it consists in the construction, combination, and arrangement of an apparatus for automatically putting in motion the mechanism of a fire-alarm box; and it further consists in combining, with a fire-alarm transmitting mechanism, an automatically-operating device for putting such mechanism in motion, an open battery to be used in connection with the automatically-operating device, and a thermostat to be placed in a building where fire is likely to occur, for the purpose of causing a connection to be made between the thermostat, the open battery, and the magnet of the automatically-operating mechanism connected with the fire-alarm box, as will be more fully explained hereinafter.

Referring to the drawings, it will be seen that I employ a box, A, for the purpose of inclosing the operating mechanism and protecting it from the weather, and preventing its being tampered with by persons not authorized to operate it.

Within the box A there is placed any approved form of alarm mechanism B, which can be put in motion by the movements of a lever; but I prefer to use such a one as is shown in Fig. 1, it being supplied with the necessary magnets, armature, conducting-wires, circuit closers and breakers, and, in its rear part, with the necessary clock-work for putting the parts in motion when operated upon by the automatic mechanism soon to be described.

The mechanism B, above alluded to, is placed within a metal box, B′, to which it is secured, the door of which may be provided with a lever, or any other suitable device for putting it in operation without the aid of the automatic mechanism connected therewith.

The above reference to the alarm mechanism is deemed sufficient, as it, separately considered, forms no part of my present invention, and is only given as an illustration of a method of connecting with such an instrument the parts which do constitute my invention, which I will now proceed to describe.

It is well known that fires frequently occur in the interior of buildings, and that considerable damage is done before they are discovered by any person who may be on the look-out for them; and my present invention has for its object the provision of means whereby, upon the occurrence of fires in such localities, an alarm shall be automatically sent to "head-quarters" as soon as the temperature in any one room in a building, or in a block or blocks of buildings, has been raised to such an extent as to cause the expansion of a small body of mercury beyond what is caused by the ordinary temperature of the room or building.

For the purpose of accomplishing the above-described result there is placed in the box which incloses the fire-alarm mechanism, or in a separate compartment thereof, an auto-

matically-operating mechanism, which, in the present instance, consists of a magnet, C C′, an armature, D, circuit-closer E, circuit-conducting wires 1 and 2, spring 3, drop-weight 4, rod 4′, arm F, and lever G.

The arrangement of these parts with reference to each other, to an open battery, and to a thermostat is such that when the parts are all in the positions shown in Fig. 2 they will not affect the position of the parts of the alarm mechanism, but will leave it free to be operated by its own circuit and clock-work, which are at such times independent of the automatically-operating device now being described; but when a fire occurs in any building, or any room of a building, in which a thermostat, H, is placed, as shown in Fig. 3, or in any other position, and the temperature of said room or building has been raised sufficiently high to cause the mercury in said thermostat to expand, it will rise therein to such an extent as to cause it to surround the wire which connects it to the open battery I, and thus the current will be closed, and the fluid will pass through conducting-wire 1 to the magnet C C′, which will attract the armature D, and withdraw from beneath weight 4 a detent, D′, which is attached to said armature. This will allow the weight 4 to slide down upon the rod 4′, in doing which it will come in contact with the end of arm F, which arrests the lever G; or the arm may be dispensed with, and the weight allowed to fall upon the end of said lever, the effect of which will be to carry down that end thereof which passes into the compartment of the box in which the automatically-operating mechanism is located, while its opposite end will be carried up, and be brought into contact with the liberating mechanism of the alarm-box, which, in the case shown, consists of a sliding bar, K, and the entire mechanism of the alarm-box will be put in motion, and the alarm turned in as effectually as it would have been had a person gone to such box and manipulated the usual appliances for such purpose.

It will be understood that the battery which is used for liberating the suspended weight 4 is entirely separate and distinct from that which operates the alarm mechanism, and that the circuit is only closed at the thermostat when the same is heated.

It will also be observed that when the weight 4 drops, the connection between it and the circuit-breaker E is severed, and the current passes through switch 1, which leaves the armature at liberty to be brought into position by the spring 3, to cause its detent to receive and hold the weight in its elevated position, to which it may be raised at any time after the mercury in the thermostat has become so far cooled as to make a break in the circuit at that point.

In order that the sliding bar K of the alarm-box may be at liberty to return to its normal position after one set of signals has been given, and thus prevent a continuance of such signals, a spring, L, is provided, which is secured to the end of lever G, and to a plate placed above or outside of the magnet C C′, or to any other fixed point, the arrangement being such that the recoil of the spring after the weight has fallen upon the arm F or the end of lever G will raise said weight, and the end of the lever upon which it rests, to such an extent as, by the lowering of the opposite end thereof, to permit sliding bar K to fall down, and thus allow a pin placed therein to fall into a notch in the circuit-breaking wheel of the alarm mechanism, and arrest its movements after one full set of signals has been given.

I wish it understood that I do not claim in this application the battery I, nor the thermostat, except in combination with the other parts of the apparatus; and, also, that I do not limit my invention to any particular forms of battery or thermostat to be used in such connection, as the forms thereof may be changed at pleasure without departing from the combinations claimed by me.

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

1. In a device for automatically putting in motion the mechanism of a fire-signal box, the combination of a magnet, conducting-wires, a circuit-closer, an armature carrying a detent, a drop-weight, and a spring for partially returning said weight to its elevated position after it has fallen, the parts being arranged substantially as and for the purpose set forth.

2. In a device for automatically putting in motion the mechanism of a fire-alarm box, the combination of the drop-weight 4, the arm F, and the lever G, whereby the falling of the weight is made to release the mechanism of the signal-box, substantially as set forth.

3. In a device for automatically sounding an alarm of fire, the combination of signal mechanism, an automatically-operating device, constructed substantially as herein set forth, an arm, and a lever for communicating the action of the falling weight to the alarm mechanism, as described.

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

CHESTER H. POND.

Witnesses:
C. M. CONNELL,
H. A. HALL.