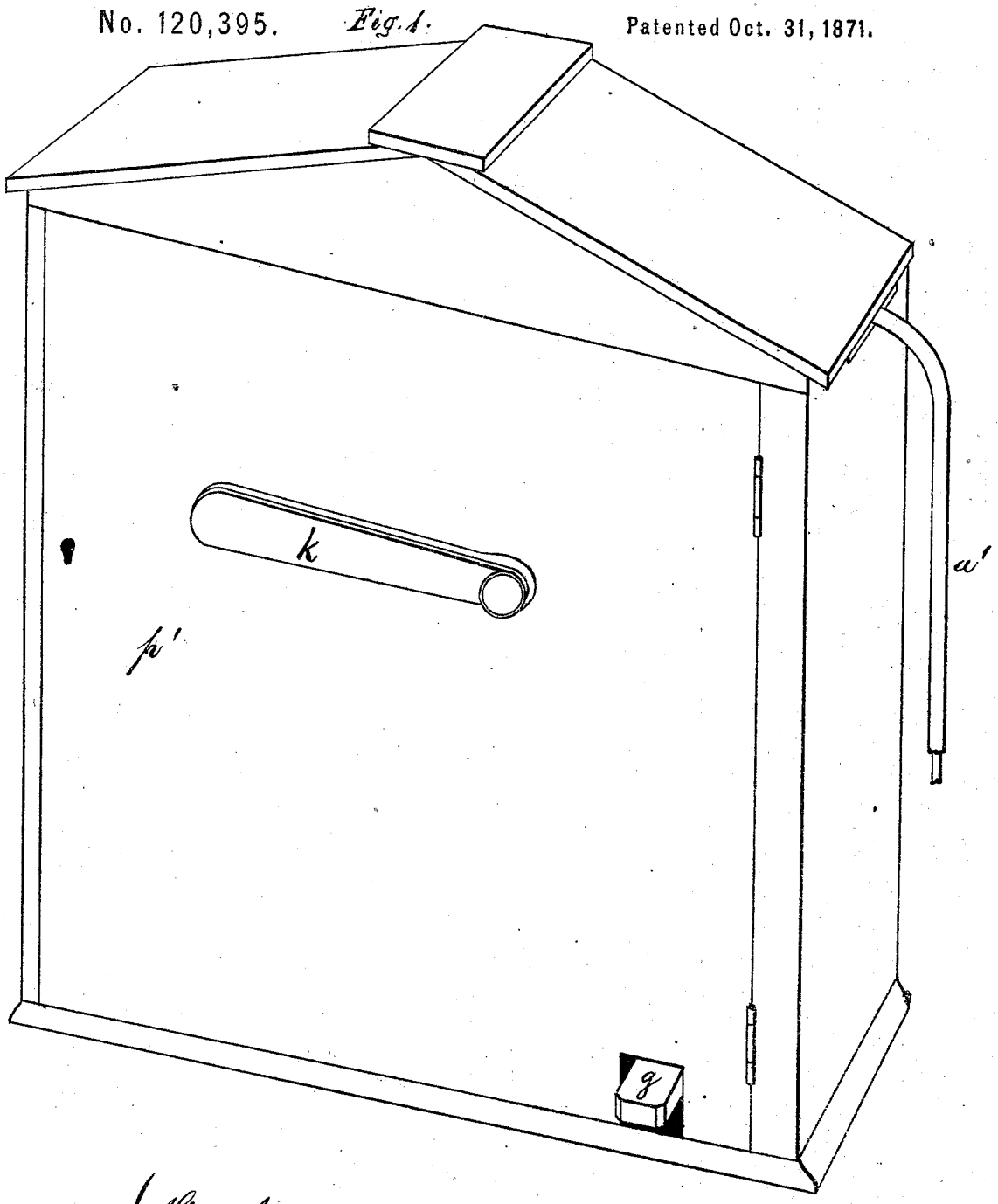
3 Sheets--Sheet 1

Wm. J. Philips. Improved Fire Alarm and Police Signal Box.

No. 120,395. Fig. 1. Patented Oct. 31, 1871.



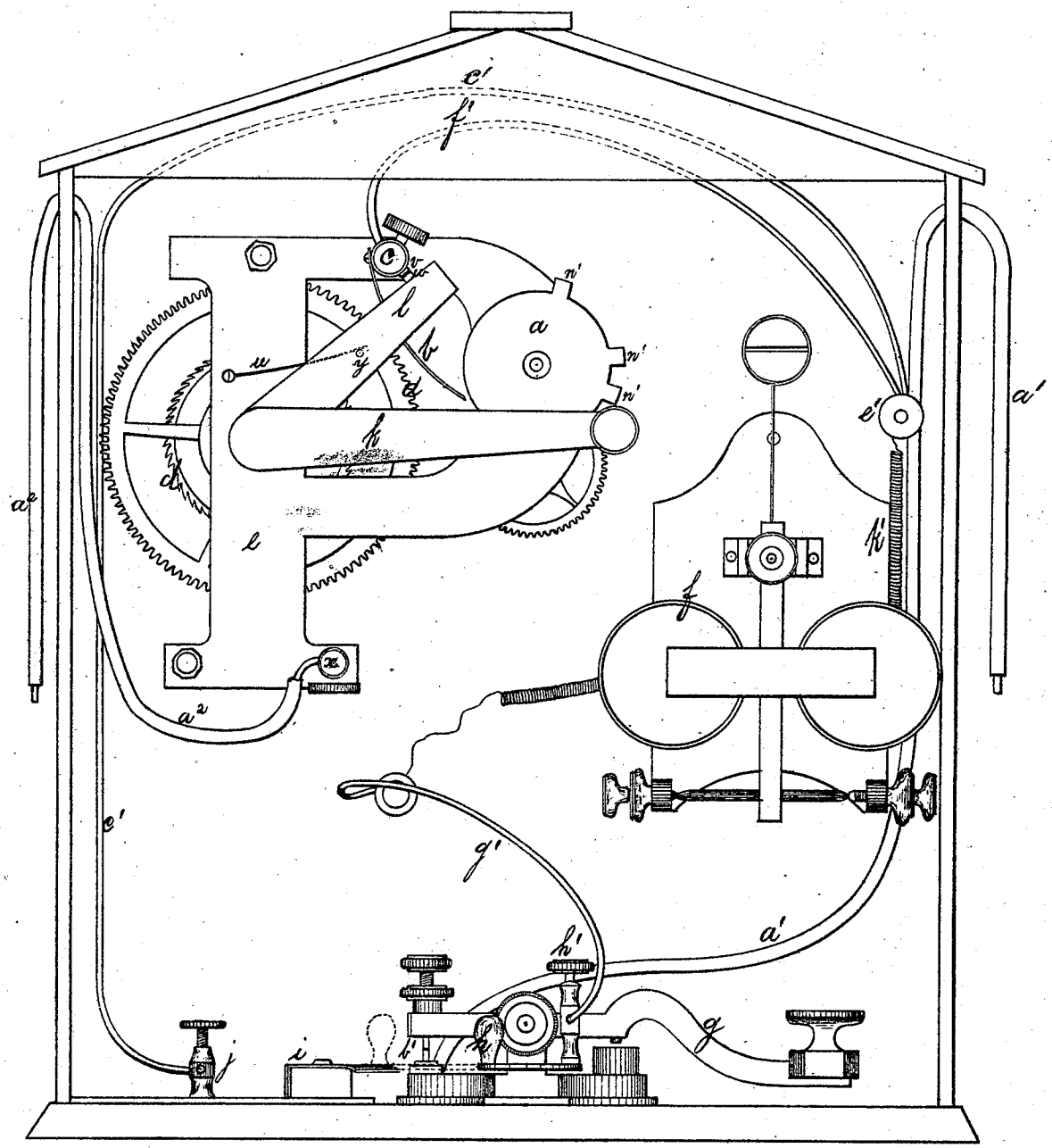
Witnesses.
Thos. A Burtt.
M. L. Walton.

Inventor.
William J. Philips

3 Sheets - Sheet 2.

Wm. J. Philips. Improved Fire Alarm and Police Signal Box.

No. 120,395. *Fig. 2.* Patented Oct. 31, 1871.



Witnesses: Thos. A. Burtt. M. H. Walton.

Inventor. William J. Philips

3 Sheets--Sheet 3.

Wm. J. Philips. Improved Fire Alarm and Police Signal Box.

No. 120,395. Patented Oct. 31, 1871.

Fig. 3.

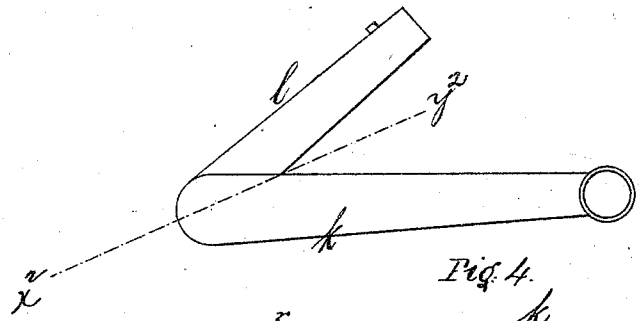


Fig. 4.

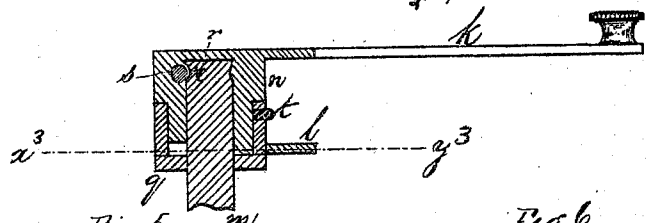


Fig. 5.

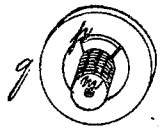
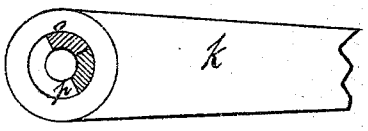


Fig. 6.



Inventor.
William J. Philips

Witnesses.
Chas. A. Burtt
M. P. Walton.

UNITED STATES PATENT OFFICE.

WILLIAM J. PHILIPS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO J. BERNARD BRINTON, OF SAME PLACE.

IMPROVEMENT IN FIRE-ALARMS AND POLICE SIGNAL-BOXES.

Specification forming part of Letters Patent No. 120,395, dated October 31, 1871.

To all whom it may concern:

Be it known that I, WILLIAM J. PHILIPS, of Philadelphia, Pennsylvania, have invented a new and useful Improved Fire-Alarm and Police Signal-Box, of which the following is a specification:

The several parts of the apparatus composing said device are compactly arranged within a wooden box, which is provided with a door, through apertures in which the winding-up and releasing-lever and the signal-key project, the whole being inclosed in an ordinary metallic box such as is usually employed for fire-alarm telegraph purposes, and which, therefore, I have not included in the drawing annexed.

In the drawing, Figure 1 is a front perspective view of the wooden or inner box with its door closed; Fig. 2, a front elevation of said box and the apparatus inclosed in it; Fig. 3, a plan of the winding-up lever *k* and its arm *l;* Fig. 4, a vertical section (on the line x^2 y^2 of Fig. 3) of lever *k*, arm *l*, and of part of shaft *m*, on which the said lever and arm turn, and of the collar *q;* Fig. 5, a perspective view of the end of the shaft *m* and of the collar *q*, designed to show the projection *p* on said collar; Fig. 6, a horizontal section (on the line x^3 y^3 of Fig. 4) of the lever *k*, designed to show the projection *o* on the lever and the projection *p* on the collar, clutched.

a, Fig. 2, is a circuit-wheel; *b*, a circuit-spring attached to the insulated stop and binding-post *c;* *d*, a clock-train for driving the circuit-wheel *a*. The train is supported by a frame composed of two similar plates, only one of which, *e*, is shown. *f* is a sounder-magnet; *g*, a signal-key for breaking and closing the circuit; *h*, a switch, shown open, and also, by dotted lines, closed; *i*, a switch-plate with binding-post *j;* *k*, a lever with an arm, *l*. This lever is fitted loosely on the shaft *m*, Fig. 4, which shaft is turned by the clock-work *d*. The lever *k* has on its lower side (see Fig. 4) a hub, *n*, which has a projection, *o*, on its lower side corresponding with a projection, *p*, on the upper side of the collar *q*, which is rigidly fixed on the shaft *m*, which is provided with a groove, *r*, for a set-screw or pin, *s*, inserted through the hub *n* of lever *k* to prevent this lever from being detached from, although it is free to be turned on, shaft *m*, as desired. The arm *l* of lever *k*, constructed as shown, is a separate piece, rigidly attached to lever *k* by a set-screw or pin, *t*, so as to be moved with said lever and at the same time have the capacity of adjustment. On the under side of arm *l* there is a short pin, *y*, Fig. 2, upon which the spring *u* acts. The insulated stop and binding-post *c* is provided with a platinum point, *v*, with which the similar point *w* of arm *l* comes in contact, arresting the upward motion of the arm *l* and thereby detaining the clock-work *d* and closing the circuit. *x*, Fig. 2, is a binding-post connected with the clock-work frame. It acts as a stop for the arm *l* when the lever *k* is moved to wind up and release the clock-train *d*. a^1 and a^2 are the two wires by which the box is connected with the air-line, the wire a^1 being connected with the insulated platinum point b^1 of the base of the key *g*, Fig. 2. The wire a^2 is connected with the binding-post *x*, Fig. 2. *c'* is the wire connecting the binding-post *j* of the switch-plate *i* with the binding-post *e'*. *f'* is a wire connecting the binding-post *e'* with insulated binding-post *c*. *g'* is a wire connecting the sounder-magnet *f* with the binding-post *h'* of the switch *h*. *k'* is the wire of the sounder-magnet *f*, connected with the binding-post *e'*.

The person intending to communicate an alarm of fire moves the lever *k* until its arm *l* comes in contact with the stop *x*, Fig. 2, thereby releasing the clock-work and winding up the spring that drives it, and causing the circuit-wheel *a* to revolve, bringing the teeth *n'* necessarily in contact with the circuit-spring *b*, thus breaking and closing the circuit according to the number of teeth, and at each revolution of the circuit-wheel indicating and recording at the central office the number of the signal-box. The circuit-wheel *a* continues to revolve, and thus to repeat the number of the box, until the platinum point *w* of the arm *l* comes in contact with the similar point *v* of the insulated stop *c*, which detains the clock-work, insuring a complete circuit through the same by the wires *c'*, *f'*, a^1, and a^2. If any one, having moved the lever *k* in the direction to wind up the clock-work, should accidentally or intentionally move this lever in the opposite direction, such action would not affect the clock-work or the motion of the circuit-wheel, since the lever *k* turns in that direction without taking hold of shaft *m;* nor will such motion permanently close the circuit between the points *v* and *w*, as, when the lever is released, the spring *u*, acting on the pin

y of the arm l, forces the lever k and arm l back, thus keeping the circuit broken at points v and w until the spring u has been overcome by the force of the clock-work on the lever k as the clock-work runs down. To guard against false alarms, those who are authorized to communicate alarms are instructed to give, in addition to the signal communicated by means of the circuit-wheel, concerted additional signals after the lever k has been arrested by the stop c. These concerted signals are given by means of the exposed part of the signal-key g, Fig. 1, which is always in the circuit. When a police officer or other authorized person wishes to communicate information other than alarms of fire, he opens the door p, Fig. 1, turns the switch h, Fig. 2, off of the plate i, thus bringing the sounder-magnet f into the circuit with the signal-key and adapting the apparatus to the sending and receiving of communications to and from the central station or other stations.

It will be perceived that the act of closing the door p' forces the switch h back upon the plate i into the position shown in dotted lines in Fig. 2, thus cutting out again the sounder-magnet and leaving the apparatus in proper condition for the communication of alarms of fire, as above described. It is not material, however, that the switch h should be located so that the inner door p shall force the switch h back upon the plate i. In fact, the switch and plate may be located, if desired, away from the door p, and so as not to be affected by it directly or immediately, and this without impairing the usefulness and effectiveness of my improvements.

I claim—

1. The lever k and its arm l, said lever projecting through an aperture in the door p of the inner box, said arm being inside the box, both lever and arm being arranged on the shaft m of the clock-work, as set forth, in combination with the circuit-wheel a, circuit-spring b, insulated stop c throwing back spring u, switch h, plate i, connecting-wires c' f' g' k' a^1 a^2, and signal-key g projecting through an aperture in the door p of the inner box, substantially as set forth, for communicating alarms of fire and verifying the correctness of the same.

2. The signal-key g, the switch h, and sounder-magnet f, in combination with the connecting-wires a^1 g' f', insulated stop and binding-post c, arm l, and connecting-wire a^2, all arranged as set forth, whereby the apparatus is adapted to the sending and receiving of police and other concerted signals when the door p' is open.

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