

(No Model.)

2 Sheets—Sheet 1.

J. YOUNG.
AUTOMATIC FIRE ALARM.

No. 382,788.

Patented May 15, 1888.

Fig. 1.

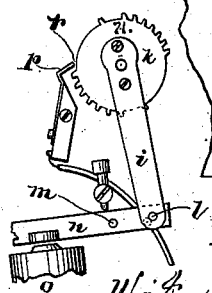
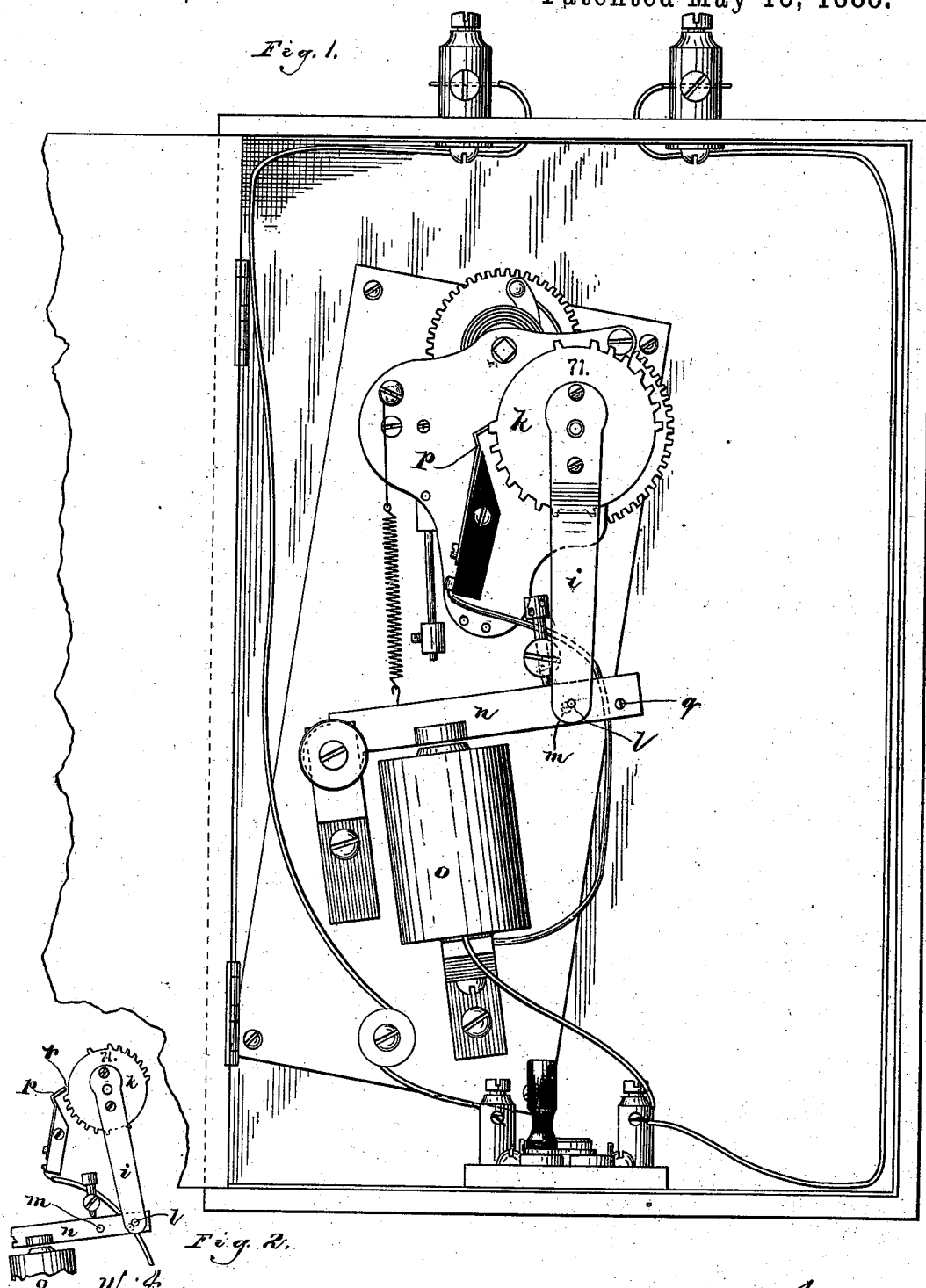


Fig. 2.

Witnesses,

Henry Frankfurter
Thos. H. Talbot

Inventor,
John Young
per. *George P. Barton*
Attorney.

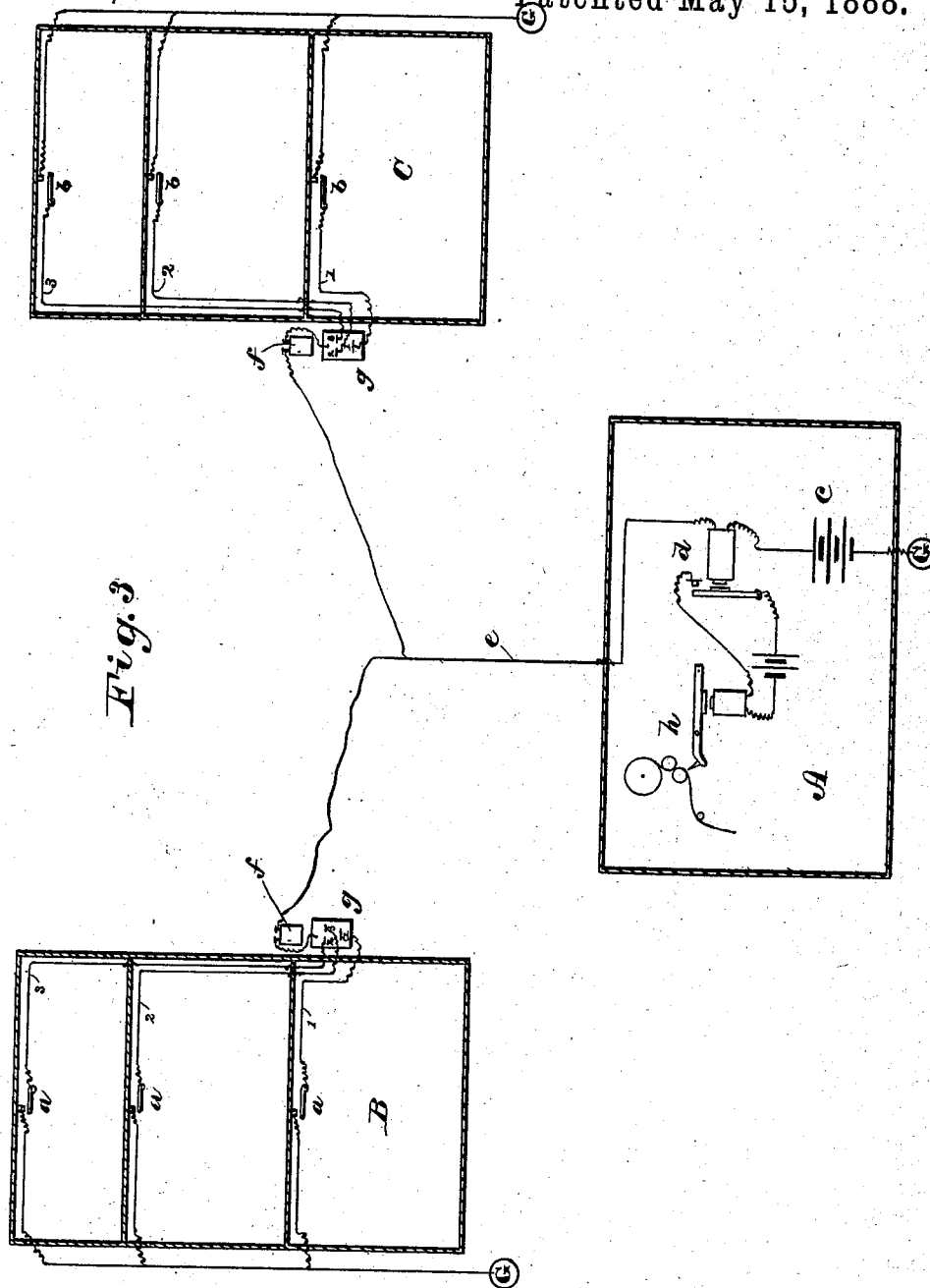
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AUTOMATIC FIRE ALARM.

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Attest.

Paul A. Staley
Chas. A. Warren.

By

Inventor.

John Young.
George P. Barton
Attorney

UNITED STATES PATENT OFFICE.

JOHN YOUNG, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF SAME PLACE.

AUTOMATIC FIRE-ALARM.

SPECIFICATION forming part of Letters Patent No. 382,788, dated May 15, 1888.

Application filed May 21, 1883. Serial No. 95,621. (No model.)

To all whom it may concern:

Be it known that I, JOHN YOUNG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented a certain new and useful Improvement in Automatic Fire-Alarms, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Heretofore it has been common to place thermostats in the ceilings of different rooms of buildings and connect them in branch circuits with battery and signaling apparatus at fire-
15 patrol stations or engine-houses, so that when the mercury rises sufficiently in a thermostat to close the circuit an indication will be made upon the annunciator at the patrol or engine house with which it is connected. When annunciators are thus relied upon to receive the signals, no satisfactory means have been heretofore employed for detecting false alarms. Signals, however, have been sent in at stated intervals by a break-wheel set in motion by
25 clock-work, as is shown in Patent No. 271,598, granted February 6, 1883, to George F. Bulen. The system of Bulen simply tests the line at stated intervals. No means are shown for detecting false signals. The system, however,
30 worked quite satisfactorily until the telephone came into use, necessitating the use of many lines, in the construction and repair of which the fire-alarm wires are frequently crossed and grounded, thus sending in false alarms that
35 cannot be distinguished from alarms caused by fire.

The object of my invention is to enable the watchman at a fire-patrol station or engine-house to distinguish true alarms from those
40 sent in accidentally.

My invention relates to the fire-alarms heretofore employed in cities; and it consists in the combination hereinafter claimed.

In the drawings, Figure 1 is a front elevation of the operative parts of my signal-box in its normal position. Fig. 2 is a view of the character-wheel and pawl or circuit-closer in the position they are left after a signal has been sent, showing the circuit open between
50 the wheel and the pawl. Fig. 3 is an illustrative diagram of the circuits between two

buildings and the patrol-station, with my signal-box arranged in accordance with my invention.

A is the patrol-station, and B and C, respectively, buildings provided with thermostats.

The thermostats *a a a b b b* (shown in the drawings) consist of a contact-point and a ribbon composed of two metals, as steel and zinc, which are differently expanded by heat. The ribbon on being heated is thus caused to close upon the contact-point and thus close the circuit. I have shown this form for clearness in illustration. I prefer, however, the other
65 well-known form of thermostat, which consists of mercury, &c., placed in a glass bulb and provided with terminals, so that when the mercury is expanded by heat it will come in contact with the upper terminal and thus close
70 the circuit.

The battery *c* is placed, preferably, at the central station and connected by means of circuit-wires with the different buildings or groups of thermostats. Any convenient number of thermostats may be included in a group.

I have shown but two groups, consisting each of three thermostats, as these are sufficient to illustrate my invention. I will describe particularly only group B, as other
80 groups may be arranged in the same manner, and therefore will not require separate description.

From ground at the central station the circuit may be traced through battery *c* and relay *d*, and thence by line *e* through my automatic signal-box *f*. After passing through the signal-box line *e* divides into branches 1, 2, 3, &c., each branch passing through the electro-magnet of its number of the annunciator *g*, and thence, as shown, through a thermostat and to ground.

If desired, a metallic circuit may be used instead of the ground-circuit.

Whenever the circuit is closed at a thermostat, current will be sent from the battery *c* through the box *f*. The box, being thus "turned in," sends in its signal automatically, and the particular number of the box is indicated upon the register *h* at the central station. The patrolman, by going to the annunciator *g*, at a glance may see in which room the fire is burn-
95
100

ing. The box, having thus done its work, is preferably so constructed that the circuit of line *e* will be left open at the box until the attendant again restores it to its normal position.

5 I will now describe more in detail the construction of my automatic fire-alarm box, as shown in Figs. 1 and 2. Ordinary clock-work is provided and so arranged that when the lever *i* is released the character-wheel *k* will be
10 set in motion.

The character-wheel shown in the drawings is adapted to send in the number seventy-one (71) twice during a single revolution. The lever *i* is provided with the pin *l*, which normally rests against the stop *m* of the armature-lever *n*, as shown in Fig. 1. When current is sent through the electro-magnet *o*, armature-lever *n* is drawn down, releasing the lever *i*.
15 The character-wheel *k* is then free to revolve, propelled by the clock-work. As the contact-spring *p* comes in contact successively with the teeth of the wheel, the circuit is closed and the relay *d* and register at the central station record the number in the usual manner. The
20 character-wheel, having thus in course indicated the particular number of the box twice, is arrested as the pin comes in contact with the stop *q*. The circuit of the box is thus left open, as indicated at *r* in Fig. 2. If now,
25 while the box is thus left open, another box should be turned on, there will be no interference with any other signals.

If the circuit of the box were not thus left open, it is evident that the register or other

instrument for indicating the number of the box would remain closed to battery. If while
35 thus closed another box should be turned in, no record would be made, and, moreover, only a portion of the current from the battery would be sent to the circuit of the box thus turned
40 in, while the circuit remained closed through another box. With boxes thus included in the circuit of each group, false signals will be readily distinguished from those sent in by the boxes. Suppose, for example, line *e* should
45 be grounded or crossed between the relay at the central station and any one of my fire-alarm boxes, it is evident that false signals thus sent in and registered will not be
50 founded with specific signals sent in from the boxes.

I claim—

The combination, with the break-wheel provided with the characters for indicating a given signal twice, of the clock-work, the circuit-closer *p*, the arm *i*, provided with the
55 stop *l*, the armature-lever *n*, provided with stops *m* *q*, the fire-alarm circuit, the electro-magnet *o*, included in said circuit, and registering apparatus, substantially as shown and
60 described.

In witness whereof I hereunto subscribe my name this 18th day of May, A. D. 1883.

JOHN YOUNG.

Witnesses:

GEORGE PRESTON BARTON,
PAUL A. STALEY.