

(No Model.)

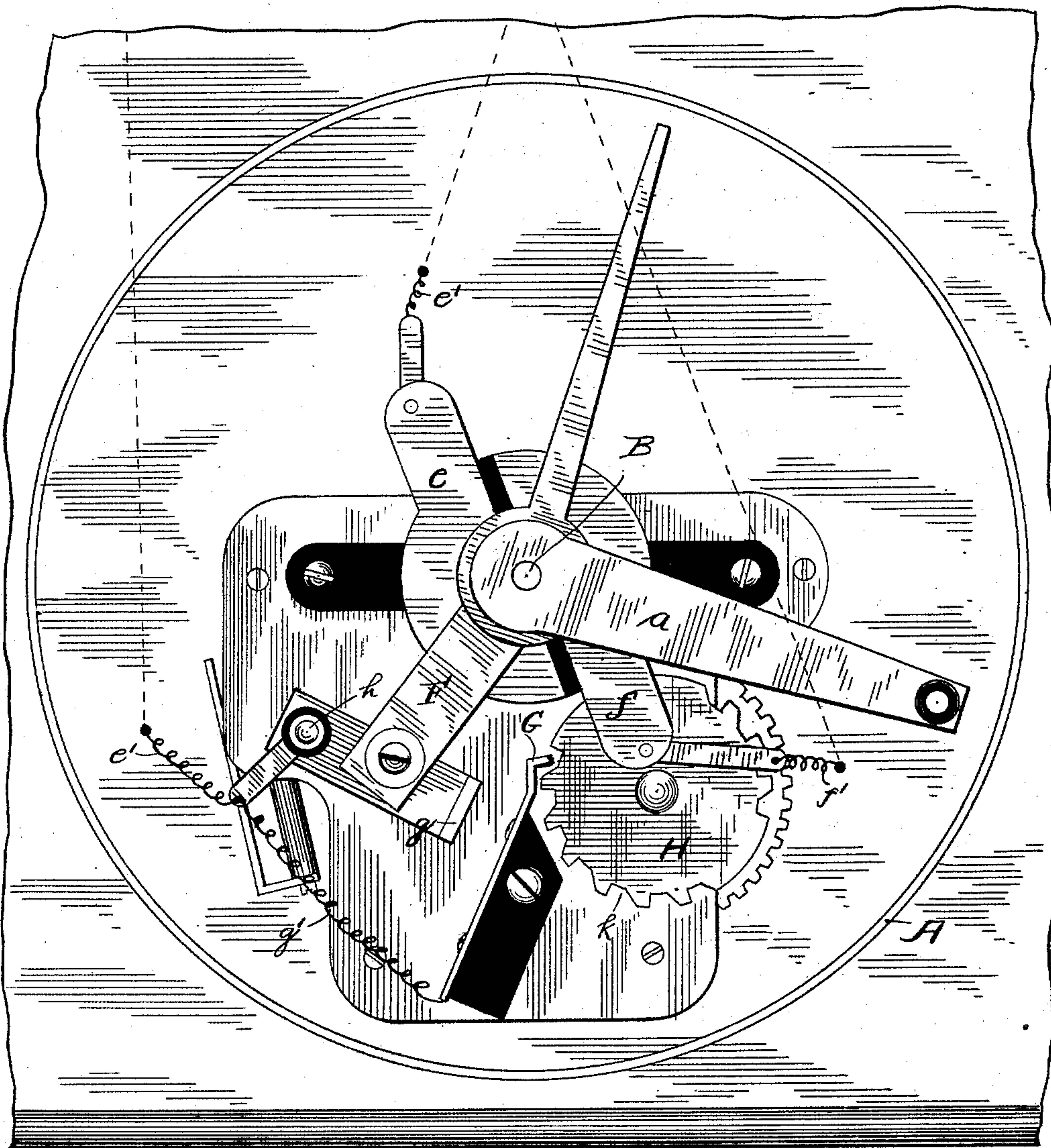
2 Sheets—Sheet 1.

C. W. McCLELLAN.
DISTRICT ALARM BOX.

No. 485,351.

Patented Nov. 1, 1892.

Fig-1-



WITNESSES:

E. H. Blackman

L. J. Geary

INVENTOR

Charles Woodford McClellan

BY

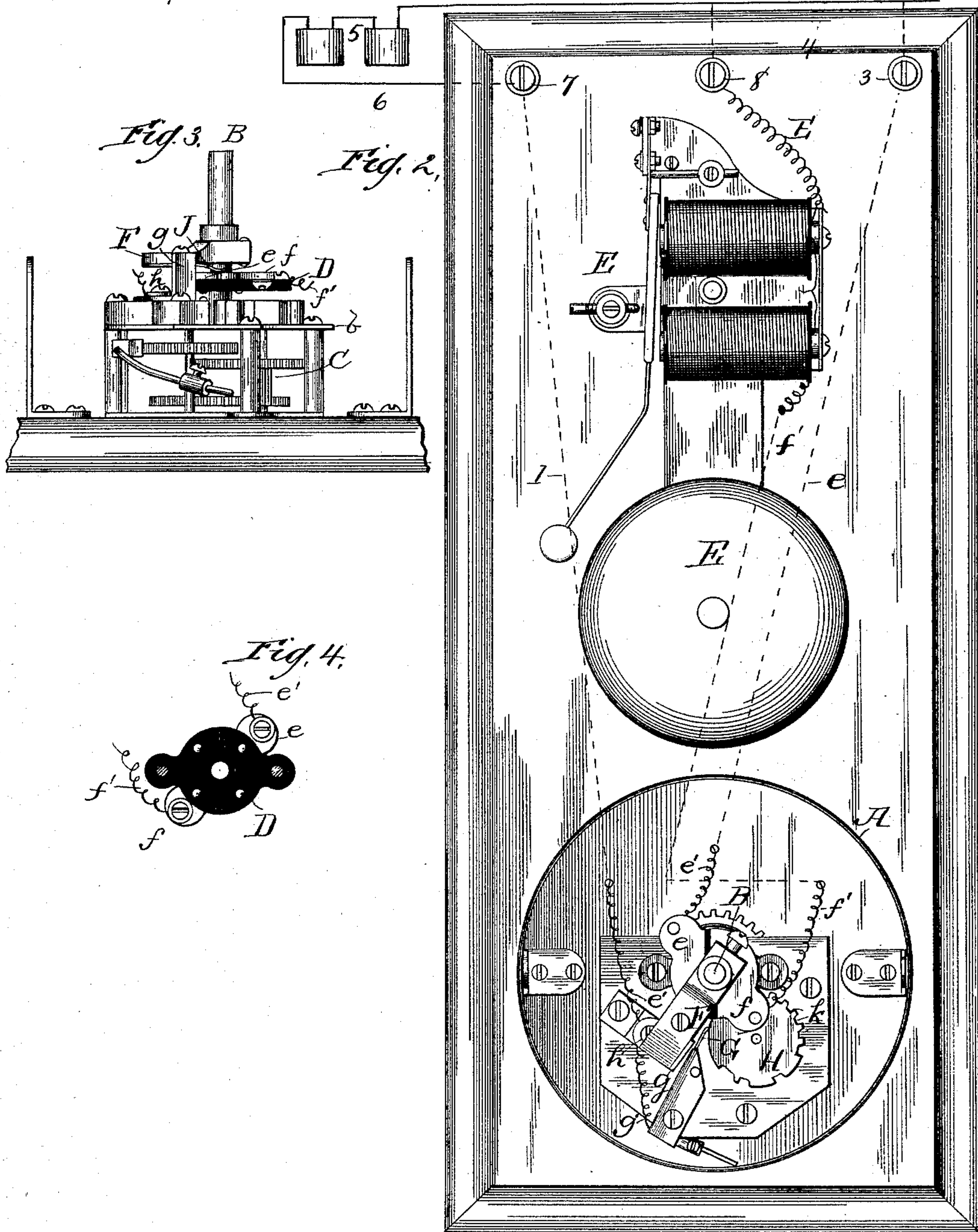
Frank D. Thomason.

ATTORNEY.

2 Sheets—Sheet 2. .

No. 485,351.

Patented Nov. 1, 1892.



Witnesses:
Wm. F. Hemming
Geo. M. Rheem.

Inventor
Charles Woodford McClellan
By Frank D. Thomason, Attorney

UNITED STATES PATENT OFFICE.

CHARLES WOODFORD McCLELLAN, OF CHICAGO, ILLINOIS.

DISTRICT ALARM-BOX.

SPECIFICATION forming part of Letters Patent No. 485,351, dated November 1, 1892.

Application filed August 1, 1891. Serial No. 401,396. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WOODFORD McCLELLAN, of Chicago, Cook county, Illinois, have invented certain new and useful
5 Improvements in District Alarm-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon.

10 Heretofore one of the principal objections to district alarm-boxes has been the difficulty experienced, after the call is once made in ascertaining the source of the false alarm and to detect by sound or otherwise the source
15 thereof.

The object of my invention is to sound an alarm at the box itself, as well as at the main station, when the crank of said box is turned past a certain "want," so as to prevent false
20 alarms without locating by sound the exact source of the same, substantially as herein-after fully described, and as illustrated in the drawings, in which—

Figure 1 is a front elevation of my improved
25 district alarm-box. Fig. 2 is a similar view with the front of the case of both the bell and box removed. Fig. 3 is a side elevation of the works within the box having the case thereof removed, and Fig. 4 is a detail view
30 showing the under side of the disk constituting the support of the principal elements of my invention.

A represents a suitable case for inclosing the mechanism of my invention, the outer
35 face of which is provided with a suitable opening at or near its center, out through which the spindle B extends. This spindle has on its outer end a crank *a*, and the box or case has suitably applied to its outer surface,
40 so as to be readable, a list of wants, such as "Watchman," "Special," "Police," "Fire," &c. These lists of wants are arranged concentric to the opening out through which the spindle B extends and preferably comes within
45 the radius of the crank, so that said crank may be turned to any one of the said wants and thereby cause the central station to be notified, as will be hereinafter more readily understood. The inner end of this spindle B
50 is suitably connected to the clockwork C, which every time the said spindle is moved out of its normal position will return it to the

same, and it has surrounding it between the outer plate *b* of the clockwork and the face of the case two segmental plates *e* and *f*, 55 which are arranged concentric with the spindle and are secured in a suitable manner to a disk of insulating material D in such manner as to be entirely separate from each other and free from said spindle. 60

Plate *e* represents one terminal of a circuit transmitted through the wire *e'*, and the plate *f* represents one terminal of a shunt or loop circuit transmitted through wire *f'*, and it is on this loop-circuit that I connect the bell E 65 or other signal to be operated whenever currents pass through the same.

F represents a metallic arm which is secured to said spindle and projects laterally therefrom, preferably at a point between the location of the segmental plates and the face of the case, and it has depending down from its under surface a contact-pin J, which bears on said segmental plates. The action of the mainspring in the clockwork keeps said arm 75 (the extent of whose projection is beyond the outer edges of the segmental plates) bearing laterally against an outwardly-projecting end of a brush *g*, which is secured to a block of insulating material, which insulates said brush 80 *g* from the clockwork. This brush *g* projects from the positive post *h* of the circuit, which latter is secured to the same block of insulating material as said brush. Electrically connected to post *h* by a shunt-wire *g'* is a brush 85 G, which is secured to and extends longitudinally beyond a suitable block of insulating material, to which it is secured, and has its free end suitably bent, so that its end edge bears on the periphery of a notched circuit-breaking metallic wheel H. As this wheel is 90 caused to revolve by turning the crank *a* out of its normal position, there is a momentary break in the circuit as the end of the brush G snaps from the periphery of wheel H into 95 the notches *k*, as will hereinafter be more fully explained.

The operation of my invention is substantially as follows: The signaling mechanism of which my invention forms a part is normally closed to the main circuit, the current of which passes through the post *h* from the main wire 1, then into brush *g*, and to and into arm F, with which it is normally in con- 100

tact. From thence it passes through the pin J into the segmental plate *e*, and from thence over the wire *e'* to the negative post 3, and then over the wire 4 to battery 5. From the battery the current passes over wire 1 back to post *h*. Now when the crank of the box is turned so as to indicate any of the minor wants—say “Watchman” or “Special”—which moves arm F out of contact with brush *g*, but does not move the pin J off of plate *e*, the current is shunted from post *h* to brush G over wire *g'*. From the brush G the current enters the circuit-breaking wheel H, from thence passes into the clockwork, thence into spindle D, through arm F, pin J, and plate *e* into the wire *e'* to the negative post 3, over wire 4 to the battery, and from the battery back over the course, as above indicated, to post *h*. This is, briefly speaking, a description of the course of the normal current when the arm F is not moved out of contact with plate *e*. When the arm F is moved so far that the pin J comes in contact with the segmental plate *f*, the current passes through brush G into the circuit-breaking wheel, thence into the clockwork to spindle D, arm F, and segmental plate *f* into the loop-wire *f'* to and through the bell or signal E, and from thence through the wire *E'* to the binding-post 8 over the shunt-wire 9 to and connecting with the wire 4, and from thence to the battery, substantially as shown in Fig. 2. The course of the current from the battery to the post *h* is the same as hereinbefore described. Whenever the crank of the box is turned to indicate any of those minor wants—say “Watchman” or “Special”—the arm F, through the medium of pin J, will not move out of contact with plate *e*; but no matter how far the arm F is moved the clock will be wound up sufficiently by the very act of moving the arm to return said arm to its normal position. At the same time the moving of the arm F causes the circuit-breaking wheel to turn so as to cause a sufficient number of breaks (or, more correctly speaking, impulses of less electro-motive force) in the circuit, so as to register the number of the box and produce the right signaling effect at the main office. When the crank is moved so as to connect the arm F with plate *f*, however, the current is switched through the loop-wire *f'* and the bell or signal is caused to operate. So far as the kind of signaling apparatus to be employed is concerned, it makes no difference. I prefer, however, to connect the loop-wire *f'* so that the initial effect of the current passing therethrough is to vitalize the magnet, and the secondary effect thereof when the hammer of the bell sounds the alarm is to momentarily cut out the magnets and send the current through the shank of the bell-hammer direct to the post 8, substantially as shown, and to hold the hammer stationary until there is a break in the circuit, (caused by the circuit-breaking wheel,) whereupon the original circuit through the magnet is again established, so as to again cause the

hammer to strike the bell. This occurs just as often as there are breaks in the circuit-breaking wheel which would effect the current passing through brush G while the arm F was in contact with plate *f*, and has the effect of causing the bell to sound distinct instead of in a jumble, as might otherwise be the case. The location of this bell may be on the box itself or separated therefrom, as shown in the drawings.

If desired, instead of but two segmental plates *e* and *f* there may be several of the same—for instance, there could be a separate plate for each want and each plate be electrically connected to either the main wire *e'* or loop-wire *f'*, according as it is desired to ring the alarm at the box itself when a particular want is called for.

The operation of my invention is substantially as follows: The signaling mechanism of which my invention forms a part is normally closed to the main circuit, the current of which passes into the post *h* with the main wire 1, then into brush *g* to and into arm F, with which it is normally in contact, into and through pin J, through segmental plate *e*, and from thence onto the main wire *e'* to the place of beginning. Now when the crank of the box is turned to indicate any of the minor wants—say “Watchman” or “Special”—which moves said arm F out of contact with brush *g*, but does not move the pin J off of plate *e*, the current is shunted from post *h* to brush *g* over the wire *g'*. From the brush G the current enters the circuit-breaking wheel H, from thence passes into the clockwork, then into spindle B, through arm F, pin J, and plate *e* into the negative wire *e'* of the main circuit to place of beginning. This is, briefly speaking, a description of the course of the current when arm F is not moved out of contact with plate *e*, and is as just described. When the arm F is moved so far that the pin J comes in contact with the segmental plate *f*, the current passes from brush G into the circuit-breaking wheel, then into the clockwork to spindle B, arm F, and segmental plate *f* into the loop-wire *f'* to and through the bell or signal E, and from thence to and connecting with the wire *E'*. Whenever the crank of the box is turned to indicate any of those minor wants—say “Watchman” or “Special”—the arm F through the medium of pin J will not move out of contact with plate *e*; but no matter how far the arm F is moved the clock will be wound up sufficiently by the very act of moving the arm to return said arm to its normal position, and at the same time turn the circuit-breaking wheel so as to cause a sufficient number of breaks (or, more correctly speaking, impulses of less electro-motive force) in the circuit, so as to register the number of the box and produce the right signaling effect at the main office. When the crank is moved so as to connect the arm F with plate *f*, however, the current is switched with the loop-wire *f'* and the bell

or signal is operated. So far as the kind of signaling apparatus to be employed in connection with my invention is concerned, it makes no difference. I prefer, however, to connect the loop-wire f' so that the initial effect of the current thereof is to vitalize the magnets, and the secondary effect thereof when the hammer of the bell sounds the alarm is to momentarily cut out the magnets and send the current through the shank of the bell-hammer direct to the negative post of the signaling mechanism, substantially as shown, and to restore the original current on the rebound of the hammer, so as to vitalize the magnet and attract the hammer again. This has the effect of causing the bell to sound in distinct notes instead of a jumble of sounds, as might otherwise be the case. The location of this bell or signal may be on the box itself or near the same, but separated therefrom, as shown in the drawings.

It is obvious that the brush g and its connecting medium with the post h may be dispensed with, if desired, and the current be made to pass wholly through the brush G , notched circuit-breaking wheel H , the clockwork-spindle B , and arm F into the segmental plates. This construction might result in the temporary cessation of the ringing of the bell on the loop whenever the brush G snapped into one of the notches of the wheel H ; but this would for some purposes not be considered as a material defect in the box.

What I claim as new is—

1. The combination, in a district alarm-box, with the clockwork, spindle B , and arm F , closed to an electrical circuit, of the segmental plates surrounding said spindle, but insulated therefrom and from each other, with one or the other of which said arm is always in contact, the main wire and loop-wire respectively connected to said plates, as described,

and an electrically-actuated signal closed to said loop-wire, as set forth.

2. The combination, in a district alarm-box, with the positive post h , brush G , notched circuit-breaking wheel H , clockwork C , spindle B , and arm F , of the segmental plates surrounding said spindle, but insulated therefrom and from each other, with some one of which said arm is always in contact, the main-line wire and the loop-wire respectively connected to said plates as described, and an electrically-actuated signal closed to said loop-wire, as set forth.

3. The combination, in a district alarm-box, with the positive post h , brush g , connected thereto, brush G , notched circuit-breaking wheel H , clockwork C , spindle B , and arm F , of the segmental plates surrounding said spindle, but insulated therefrom and from each other, and with some one of which said arm is always in contact, the main-line wire and the loop-wire respectively connected to said plates, as described, and an electrically-actuated signal closed to said loop-wire, as set forth.

4. The combination, in a district alarm-box, with the positive post h , brush g , connected thereto, brush G , notched circuit-breaking wheel H , clockwork C , spindle B , and arm F , and pin J , depending downwardly therefrom, of two segmental plates surrounding said spindle, but insulated therefrom and from each other, and with some one of which said arm is always in contact, the main-line wire and the loop-wire respectively connected to one of said plates, as described, and an electrically-actuated signal closed to said loop-wire, as set forth.

CHARLES WOODFORD McCLELLAN.

Witnesses:

SUE CARNEY,

FRANK D. THOMASON.