C. E. CHINNOCK. 2 Sheets--Sheet 1.

Improvement in Electro-Magnetic Annunciators.

No. 123,808. Patented Feb. 20, 1872.

Fig. 1.

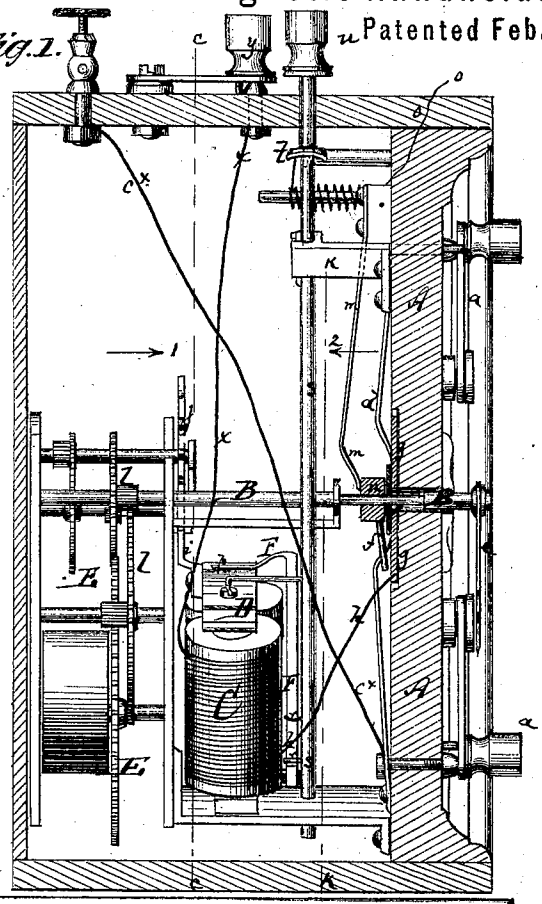
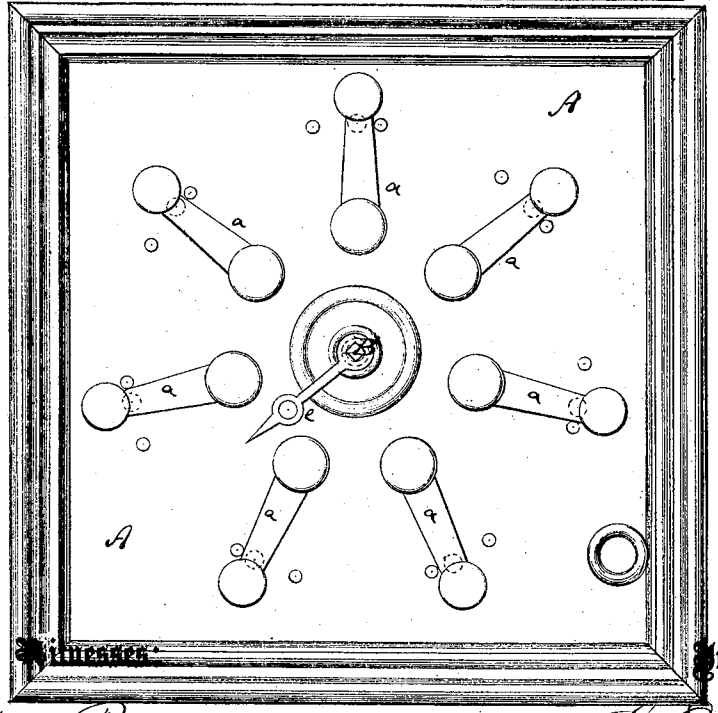


Fig. 2.



Witnesses:

John Becker.

Francis McArdle.

Inventor:

C. E. Chennock

Per Munn & Co

Attorneys.

C. E. CHINNOCK. 2 Sheets--Sheet 2.

Improvement in Electro-Magnetic Annunciators.

No. 123,808. Patented Feb. 20, 1872.

Fig. 3.

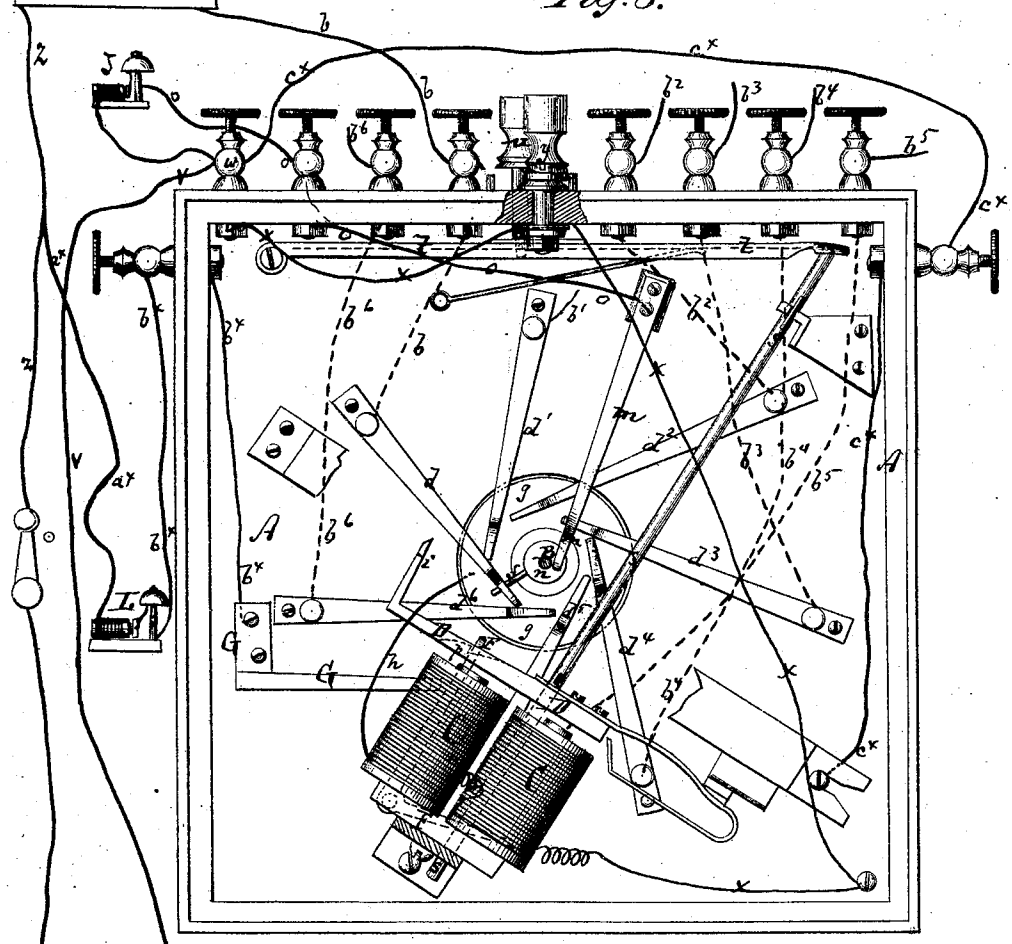
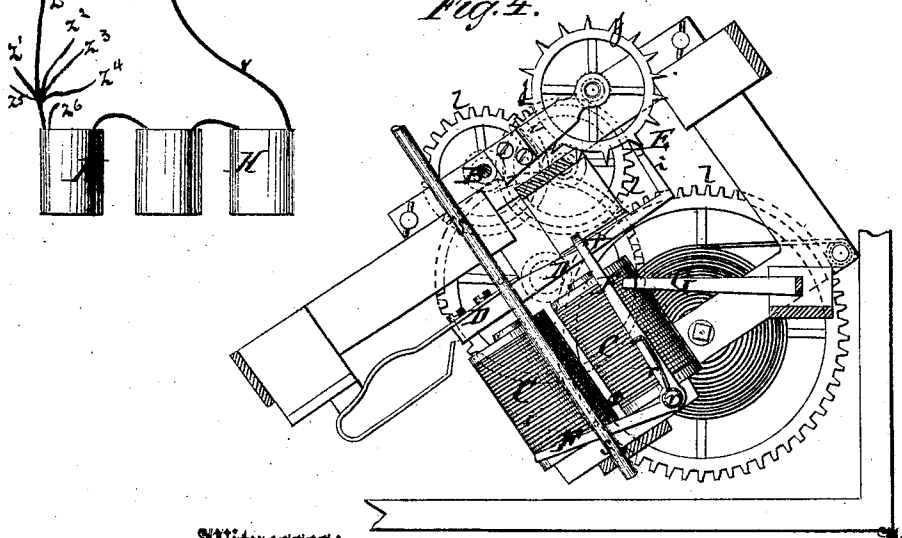


Fig. 4.



Witnesses:

John Becker

Francis McArdle

Inventor:

C. E. Chinnock

Per Munn & Co

Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES E. CHINNOCK, OF NEW YORK, ASSIGNOR TO EDWIN HOLMES, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ELECTRO-MAGNETIC ANNUNCIATORS.

Specification forming part of Letters Patent No. 123,808, dated February 20, 1872.

To all whom it may concern:

Be it known that I, CHARLES E. CHINNOCK, of New York city, in the county and State of New York, have invented a new and Improved Electro-Magnetic Annunciator; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a vertical transverse section of my improved annunciator. Fig. 2 is a front view of the same. Fig. 3 is a vertical section of the same taken on the plane of the line *c c*, Fig. 1, and seen in the direction of the arrow 1. Fig. 4 is a similar section of the same taken on the plane of the line *k k*, Fig. 1, and seen in the direction of the arrow 2.

Similar letters of reference indicate corresponding parts.

This invention has for its object to provide an automatic indicator for electro-magnetic alarm or call apparatus, and means for establishing currents through audible or other signals whenever the indicator is set in motion. It is intended for use on alarm apparatus to first indicate the locality at which the operating current was established and subsequently start the alarm, and is equally well applicable to hotel-annunciators and similar apparatus for showing the number of room and calling the attendant.

A in the drawing represents the face-plate or dial of the indicating apparatus. It has a series of keys, *a a*, arranged radially or otherwise around a common center, every such key serving to establish metallic connection between a wire, *b*, from the battery, and a spring, *d*, affixed to the reverse of the plate A. B is a shaft, hung in the frame of the machine and in the plate A, forming the center of the series of keys *a*. The shaft B carries on the face of the plate A a projecting pointer, *e*, and on the reverse of said plate a projecting metallic spur, *f*. *g* is a metal plate, secured to the back of A around the shaft B, but insulated from the latter. The several springs *d* d^1 d^2 d^3, &c., connecting with the several wires *b* b^1 b^2 b^3, &c., respectively, all bear with their loose ends against this plate *g*, from which a wire, *h*, leads to an electro-magnet, C. The armature-lever D of this magnet has a projecting arm, *i*, entering, when raised, a spur-wheel, *j*, of a clock-work, E, and preventing, consequently, any movement of said clock-work. The shaft B is, by gearing *l*, connected with the clock-work, to be rotated thereby whenever the arm *i* is withdrawn from the wheel *j*. The spur *f* will, when the shaft B revolves, slide beneath the springs *d* d^1, &c., and break contact between them and the plate *g*. *m* is a metal spring, resting upon a collar, *n*, of the shaft B, and connected with a wire, O. The armature D has a hook, *p*, formed at its end. A hooked drop, F, catches over this hook *p*. When the armature is lowered the drop F is released, and is by a spring, *r*, drawn against a metallic rest, G. A rod, *s*, and lever *t*, connected with the drop F and with a key or handle, *u*, can be used to relock the drop F to the hook *p* of the armature. H is a battery, from which a wire, *v*, leads to a screw-cup, *w*, whence another wire, *x*, extends to the magnet C. *y* is a switch on the wire *x*, for breaking the circuit. Wires *z* z^1 z^2 z^3, &c., lead from the other pole of the battery to the several rooms or parts of a house, and connect thence with the several wires *b* b^1 b^2 b^3, &c., respectively. The wire *z* is shown to lead to a window, I, from which the wire *b* goes to a spring, *d*. When the window is raised a circuit is established through the wires *z b*, spring *d*, plate *g*, wire *h*, electro-magnets, wires *x* and *v*, so that the electro-magnets will be charged. This will cause the armature *d* with its arm *i* to be drawn down and the train of wheels released, so that the shaft B will be revolved until the spur *f* lifts the spring *d* from the plate *g*, and thereby breaks the circuit. The armature is then drawn off the magnet by its spring, and the arm *i* will stop the train of wheels, causing the pointer *e* to stop opposite the spring *d*, through which the circuit started. The pointer will thus on the keys *a* or equivalent marks indicate the name or number of the window or thing moved; or, if on an annunciator, the number of the room in which the circuit was closed. The spur *f*, in breaking the circuit through the magnet C, transfers it from the spring *d*, with which it remains in contact, to the spring *m*, and thence by the wire *o* to the magnet of an

alarm-bell, J, to which a branch of the wire *v* extends, as shown in Fig. 3. Thus a burglar-alarm can be set in operation by the action of the primary current through the springs *d*. When the apparatus is used for an annunciator the spring *m* is dispensed with but the drop F and rest G applied. The current, when closed in any room, charges the electro-magnet as above described, lowers the arm *i*, and causes rotation of the shaft B until the spur *f* breaks the circuit. In being attracted to the magnet the armature releases the drop, which falls against the rest G, and thereby establishes a new circuit through the bell L. This circuit is as follows: A branch, $a^{\times}$, from the wire *z* or the same pole of the battery leads to the magnet of the bell L and another wire, $b^{\times}$; thence to the rest G. This rest being in contact with the drop F is thereby in metallic connection with a wire, $c^{\times}$, which leads to the screw-cup *w*, whence the wire *v* extends to the battery, as shown. A continuous ringing is thus kept up to call the attendant, who, by the index *e*, can read the number of the room whence the call emanated. The circuit is broken when the attendant, by pressing on the key *u*, moves the lever *t* and rod *s* so as to carry the drop F back over the hook *p* of the armature, separating thus the drop from the rest.

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

1. The spur *f*, affixed to the rotary shaft B for raising the springs *d* d^1, &c., off the plate *g*, and thereby interrupting the currents which give it motion, as set forth.

2. The pointer *e*, applied to the shaft B, in combination with the spur *f* and springs *d* d^1, &c., substantially as herein specified.

3. The collar *n* on the shaft B, combined with the spur *f*, spring *m*, and plate *g*, to establish a secondary current, substantially as herein shown and described.

4. The plate *g*, secured in the frame A and in metallic contact with the springs *d d* which connect with the battery, but insulated from the shaft B, whose spur *f* breaks such connections, as set forth.

5. The springs *d* d^1, &c., secured to the plate or frame in metallic contact with the fixed plate *g*, from which they can be raised by a spur, *f*, on a rotary shaft, B, as set forth.

6. The combination, on an alarm apparatus, of the springs *d* d^1, plate *g*, shaft R, and spur *f*, with the collar *n* and spring *m*, substantially as herein shown and described.

7. The armature D, provided with a projecting arm, *i*, which engages in a wheel of a clock-work, to arrest the same as long as the armature is not attracted by its magnet, as specified.

8. The clock-work E, imparting motion to the shaft B, but arrested by an arm, *i*, of the armature, which, when drawn down by the charging of its electro-magnet, releases the clockwork, allowing it to revolve the shaft, as specified.

9. The shaft B, so connected with the clock-work E and with a projecting spur, *f*, that when moved it will serve, by the action of the spur on the springs *d* d^1, &c., to arrest the train which gave it motion.

10. The lever and rod *s*, in combination with the drop F, to reset it upon the armature-lever, and thereby break the circuit, and at the same time release the train of clock-work, as set forth.

CHARLES E. CHINNOCK.

Witnesses:

GEO. W. MABEE,

T. B. MOSHER.