(No Model.) 2 Sheets—Sheet 1.

R. J. HEWETT.

ANNUNCIATOR.

No. 300,607. Patented June 17, 1884.

Fig. 1.

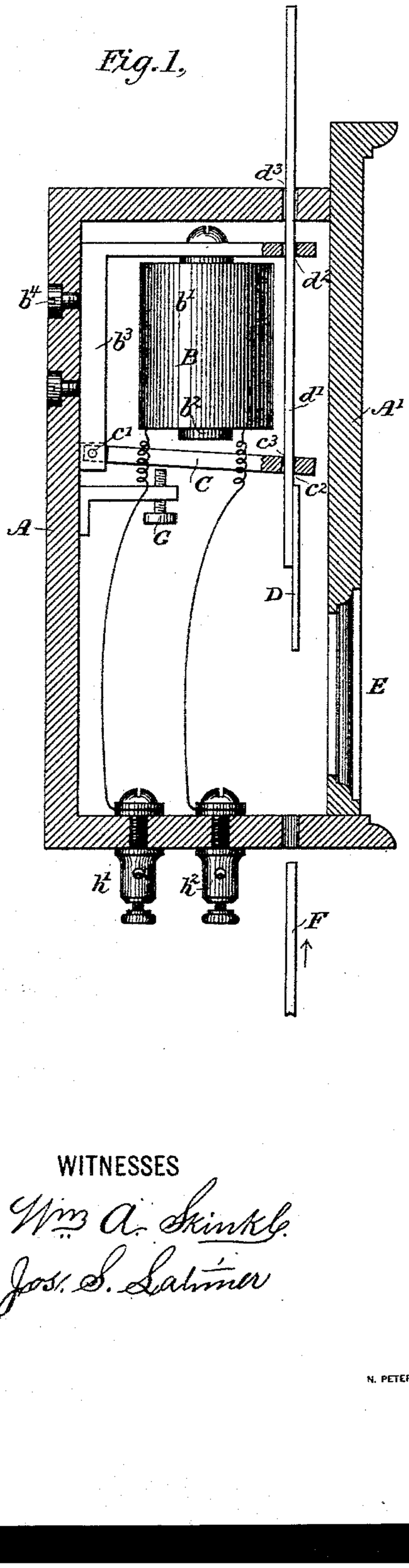
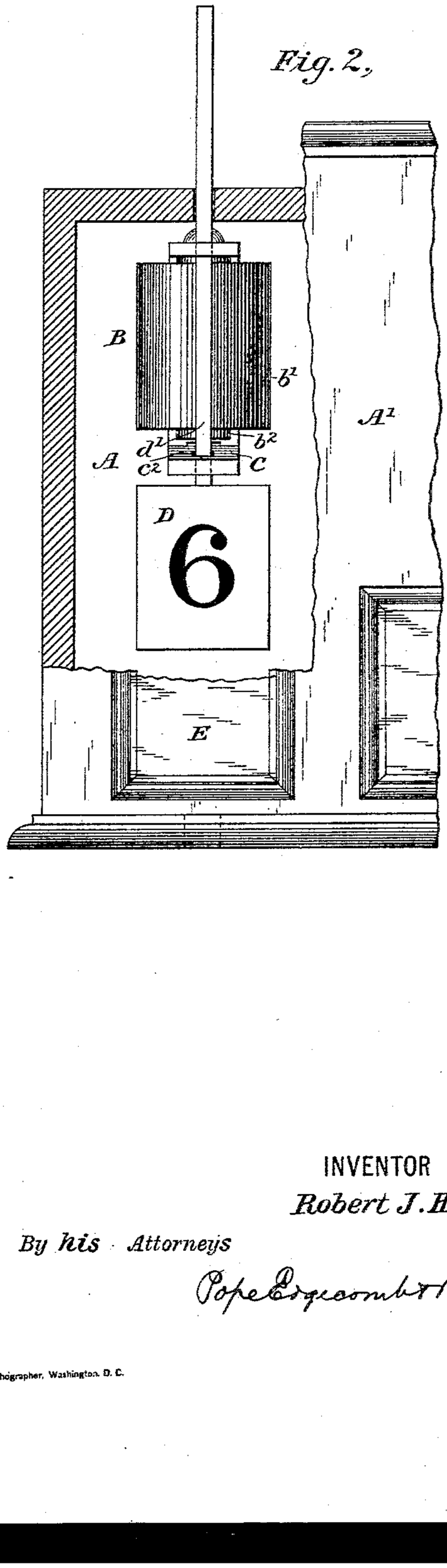


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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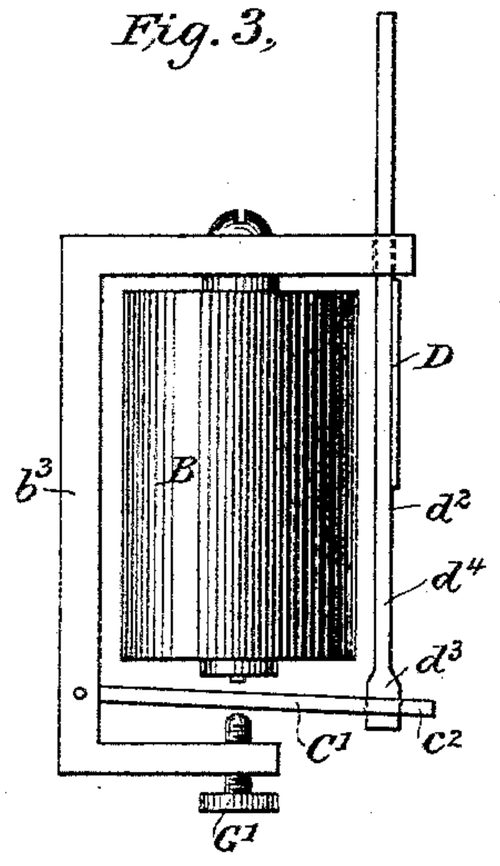
Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT JOSEPHUS HEWETT, OF ST. LOUIS, MISSOURI.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 300,607, dated June 17, 1884.

Application filed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. HEWETT, a citizen of the United States, residing in St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Annunciators, of which the following is a specification.

My invention relates to the class of electrically-actuated instruments employed for indicating, by visual signals, that service or attendance is required at some one of a number of different points. Instruments of this class are commonly termed "annunciators," and they are usually organized to display or to indicate any one of several numerals, accordingly as an electric circuit is completed through the instrument from one or another of a number of rooms or different localities. The numeral thus indicated corresponds to the number of the room at which the electric circuit is completed, or at which the service is desired.

The object of my invention is to provide means for controlling the positions of the indicating devices in a simple and efficient manner.

The invention consists in constructing a series of plates or drops respectively corresponding to the points which it may be desired to indicate in such a manner that they will each be held in a given position by means of a clutch carried upon or forming a part of the armature-lever of an electro-magnet as long as the electro-magnet is not vitalized. When, however, a current of electricity is caused to traverse the coils of any one of the electro-magnets, the corresponding drop will be released from its clutch and permitted to move into a position designed to indicate that service is required at the locality corresponding to the numeral or other distinguishing-character borne by the plate or drop. The clutch consists, merely, of an opening formed through that end of the armature or its lever which is remote from its supporting-pivot, and through this opening extends a rod attached to the plate or drop. When the armature is remote from its electro-magnet, this clutch serves to bind the rod in any position in which it may have been placed by reason of its tendency to force the opening through which the rod extends out of line with the rod. When, however, the armature is attracted toward its electro-magnet, the clutch releases its grasp upon the rod and permits it to move into another position.

In the accompanying drawings, which illustrate the invention, Figure 1 is a vertical transverse section of a portion of an annunciator; and Fig. 2 is a front elevation of the same, partly in section. Fig. 3 illustrates a modification.

Referring to these figures, A represents a supporting-frame for a series of electro-magnets, B, and a corresponding number of annunciator-drops, and A′ represents the front or face board of the same. The electro-magnets B, one only of which is shown, are each preferably constructed with a single coil, b', surrounding a core, b^2, of soft iron. A supporting-bracket, b^3, which is also preferably of soft iron, is secured to the frame A by screws b^4, or in any other suitable manner.

Pivoted to the bracket B at a point, c', is a soft-iron armature, C, applied to the core b^2. When the bracket b^3 is of soft iron, this armature is preferably placed in magnetic contact or connection with the same at its pivoted extremity.

At the end of the armature C remote from the pivot c is formed an aperture, c^2, through which extends a rod, d', designed to control the position of the annunciator drop or plate D. The rod d' extends through suitable guide-apertures, d^2 and d^3, respectively formed in the bracket b^3 and the supporting-frame A. This rod is preferably of non-magnetic material—such, for instance, as brass. The parts are so constructed that when the armature C is in the position shown in the drawings, remote from its electro-magnet, the clutch-aperture c' will serve to grasp the rod d' by pressing against the opposite sides of the same at the points c^2 and c^3. The guide-apertures prevent the rod from being thrown out of its perpendicular position, and the clutch serves thus to hold it in whatever vertical position it may chance to be placed. It is designed that the rod shall be held in the position shown in the drawings when the electro-magnet is not vitalized—that is to say, with the drop D in its upward position and concealed behind the face-board A′. When,

however, an electric circuit is completed through the coils of the electro-magnet, the armature C will be drawn upward, causing the clutch to release its hold upon the rod, which then falls, by virtue of gravity, into its second position, so that the plate or drop D is exposed through a corresponding opening, E, formed in the front A'.

Upon the face of the plate D is placed any convenient designating-character, for the purpose of indicating the point at which the circuit through the corresponding electro-magnet is completed and at which service is desired. In this instance the numeral 6 is shown.

The rod d' and the aperture c' are preferably of rectangular cross-section, for the purpose of preventing the drop from turning axially. For the purpose of replacing the drop in its hidden position when the indication has been noticed, any convenient well-known means may be employed. In the drawings I have shown a movable rod, F, which, when pushed upward, engages the plate and moves it upward into the position shown in the drawings, in which position it will be retained until the electro-magnet is again vitalized.

It is evident that any convenient number of these devices may be combined in one annunciator-board, and any of the well-known devices may be employed for replacing any or all of the drops simultaneously.

In some instances it may be found desirable to employ an adjustable stop, G, for limiting the motion of the armature C, and such a stop may be applied in any convenient manner.

The terminals of the coil of the electro-magnet are shown as leading to two binding-posts, h' and h^2, respectively, which afford convenient means for the attachment of the electric conductors leading to and from the instrument.

It is not necessary that the bracket b^3 of the electro-magnet should be of magnetic material; but I usually prefer to so construct it, for the purpose of obtaining greater magnetic effects upon the armature.

In Fig. 3 a modification in the construction of the device is illustrated. In this construction the rod d^2 is made smaller immediately above the point grasped by the clutch c^2, for the purpose of preventing the rod from being arrested before it has fallen the required distance, should the electro-magnet be vitalized by a very short current or impulse. The larger portion, d^3, having been freed from the clutch, it cannot be again grasped by the same unless the armature C' is allowed to fall away from the electro-magnet a greater distance than that in which it normally stands. For the purpose of preventing it from thus falling a sufficient distance to grasp the smaller portion, d^4, of the rod d^2, a stop, G', is preferably employed. This stop is adjusted to be out of contact with the armature when the rod d^2 is held in the position shown in the drawings by reason of the armature being bound to the larger portion of the rod. The position of the stop is, however, such that it will prevent the armature from falling a sufficient distance to grasp the smaller portion, d^4, of the rod.

Fig. 3 also illustrates a different method of applying the plate or drop, it being in this instance applied to a portion of the rod d^2 directly in front of the electro-magnet. When the rod is in its upward position, the plate will be hidden, but when in its lower position visible, or vice versa. The plate when applied in this manner also serves, by striking against the upper side of the armature or clutch, to prevent the rod d^2 from falling too great a distance.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, of an electro-magnet, its armature and armature-lever, an annunciator-drop, a supporting-rod for the same, and a clutch for said rod carried by said armature-lever, and consisting of an extension of the armature or its lever, having formed therein an aperture of greater diameter than said rod.

2. The combination, substantially as hereinbefore set forth, of an annunciator-drop, a rod for supporting the same in its normal position, an electro-magnet, and an armature applied to said electro-magnet, and having an aperture formed in one extremity, through which said rod extends, the sides of which aperture grasp said rod when said armature is remote from said electro-magnet.

3. The combination, substantially as hereinbefore set forth, of an electro-magnet, an annunciator-drop, a rod attached to the same, and an electro-magnetic clutch consisting of an opening formed in said armature, which clutch serves to grasp said rod when said electro-magnet is not vitalized, and to release the same when vitalized.

4. The combination, substantially as hereinbefore set forth, of an annunciator-drop, a rod attached thereto, an electro-magnet, and an armature applied thereto, which armature is pivoted at one extremity, and has an aperture formed in its remaining extremity for receiving and serving as a clutch for said rod, substantially as described.

5. The combination, substantially as hereinbefore set forth, of an electro-magnet, a clutch actuated by said electro-magnet, an annunciator-drop, and a rod carrying the same, which rod is of greater size at the point grasped by said clutch than through the other portions which are designed to pass through said clutch.

6. The combination, substantially as hereinbefore set forth, of an electro-magnet, an armature having an aperture formed therein, and a movable rod extending through said aperture and designed to be normally held in a given position thereby, which rod is of greater size at the point normally held by said aperture than through the other portions which are designed to pass therethrough.

7. The combination, substantially as hereinbefore set forth, of a movable rod of greater size

at one point in its length than at other points, an electro-magnet, its armature, which armature serves as a clutch for engaging said rod, and a stop for limiting the movement of said armature, which stop is normally out of contact with said armature.

In testimony whereof I have hereunto subscribed my name this 25th day of February, A. D. 1884.

ROBT. JOSEPHUS HEWETT.

Witnesses:
C. W. GROOS,
CARL KAMMEYER.