E. AXTHELM & W. PEASE.

ELECTRO MAGNETIC ANNUNCIATOR.

No. 177,918. Patented May 30, 1876.

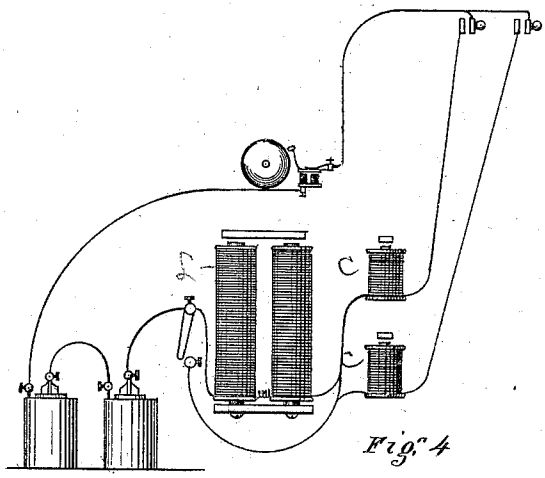

Fig. 4

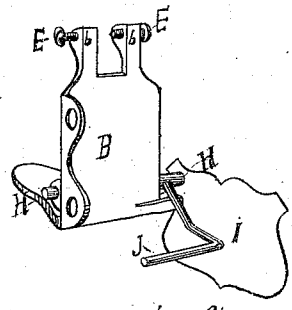

Fig. 5

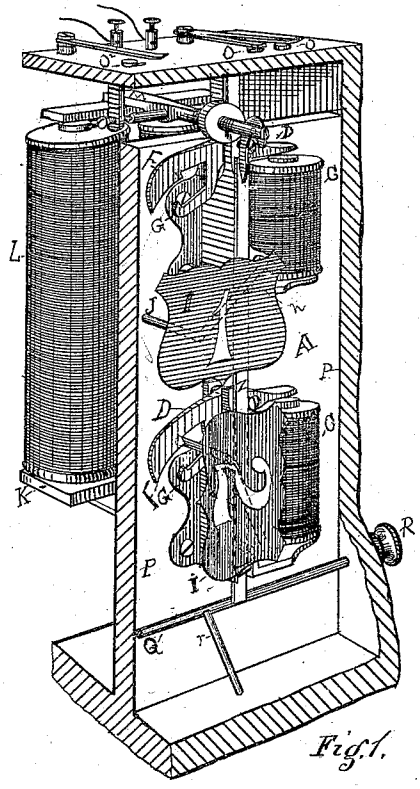

Fig. 1.

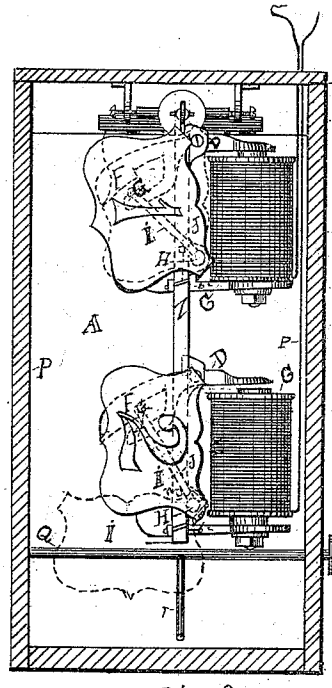

Fig. 2.

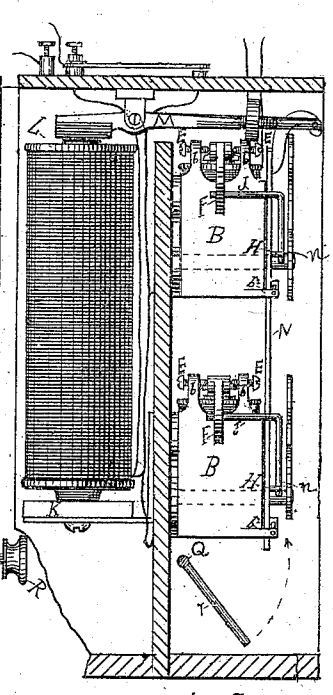

Fig. 3.

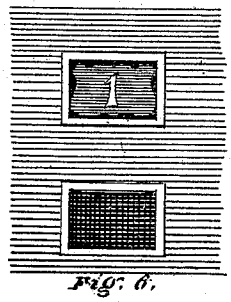

Fig. 6.

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UNITED STATES PATENT OFFICE.

ERNST AXTHELM AND WILLIAM PEASE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ELECTRO-MAGNETIC ANNUNCIATORS.

Specification forming part of Letters Patent No. **177,918**, dated May 30, 1876; application filed March 16, 1876.

To all whom it may concern:

Be it known that we, ERNST AXTHELM, of Pittsburg, State of Pennsylvania, and WILLIAM PEASE, of Pittsburg and State of Pennsylvania, have invented a new and useful Improvement in Annunciators for Hotels and other buildings.

The accompanying drawings and description set forth what we consider the best means of carrying out our invention. We do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

In the drawings, Figure 1 represents a perspective view of our annunciator. Fig. 2 is a front view of the same. Fig. 3 is a vertical sectional view of the annunciator, as shown longitudinally. Fig. 4 is a view of the circuits. Fig. 5 is a rear view of the metallic frame-work B and number-plate I. Fig. 6 is a front sectional view, showing the face of the annunciator with a number (one) down.

Our invention consists in a mechanism operated by electricity, by which operation a number corresponding with the number of the room from which the alarm is given is liberated, and dropped down in such a position that it (the number) may be easily seen through the dial-plate opening. In this position the number remains till the next alarm is struck, at which time it is restored automatically to its first condition, thereby obviating the necessity of resetting the annunciator every time an alarm is given.

The details of the construction are more specifically set forth below.

To the front of the back-board A are attached metallic frames B B. To these frames are attached the magnets C C, with their armatures D D pivoted or hinged to the frame-work B B at *b b* by the pivoted set-screws E E E E, in such a manner that the armature, by its own gravity, will remain open unless drawn down to the magnet by the closing of the electric current. At the opposite end of the armatures D D from the magnets C C is an opening in the same, (the armature being flattened and widened at that point,) the peculiar shape of which opening forms the hooks or keepers F F and G G upon the armature. Hinged to the frames B B by the lugs are rollers H H, to the outer ends of which are attached the number-plates I I. These number-plates are attached to the rollers H H at the upper corners when the plates are down, as shown more plainly at I, Fig. 5. Attached to the rollers H H in the rear of, running parallel and back at right angles with, the number-plates are the arms J J. To the rear of the back board A is attached a metallic frame-work, K. To this are attached the magnets L L and armature M. This armature is hinged to the frame-work in the same manner as the armatures C C, and remains open by its own gravity when the electric current is open. In order that this may be more effectually done, and the armature properly balanced, there is a screw-weight attached to the armature M on the arm opposite the magnets L L. To the end of the armature M, opposite the magnets L L, is attached, by a double slotted joint, a vertical slide, N, working in slots provided for that purpose in the frames B B at b^2 b^2. In the slide N are pins *n n*, the uses of which will be hereafter described. O, O, and O^2 are keys for opening and closing the electric current. Beneath the slide N, and working into the case P, is the roller Q, extending the whole width of the case from side to side. Attached to the end of this roller is a knob or crank, R, and also attached to the roller Q is an arm, *r*, placed on a line with the slide N.

To enable the occupants of a room in the house to give notice to the office, an apparatus is placed on the wall or any convenient place where the face may be seen. A wire is run from each of the magnets to the room, corresponding in number to the number of the magnets, as magnet 1 to room 1, magnet 2 to room 2, and so forth, there being as many magnets as rooms communicating.

In each room the wire terminates in a key for opening and closing the electric current. Two such keys are indicated, O O, which are supposed to be in different rooms, and communicating with different magnets, as room No. 1 with magnet 1, room No. 2 with magnet 2, &c. Now, as all the magnets are connected to the battery by a circuit of wires, it is obvious that on opening and closing the circuit by means of the key in any one of the rooms the

magnet will be actuated thereby—for instance, be it supposed that the occupant of room 1 is in want of something, and the number-plates are all up; the arms J J will then rest against and are held by the hooks or keepers upon the armatures D D at F F. Now, on pressing down on the key in the room, the electric current will be closed, the magnet will draw down the armature D, releasing the arm J from the hook or keeper F of the armature, causing the arm J, by its own gravity and that of the number-plate I, to drop down against the hook or keeper G of the armature D, where it is held as long as the key is pressed down or closed. As soon as the pressure is removed from the key the electric current is opened, allowing the armature D to drop down by its own gravity, thus releasing the arm J from the hook or keeper G, permitting the number-plate to fall to the position in the opening of the dial-plate, as shown in Fig. 5. The movements of the number-plate are also shown by the dotted lines in Fig. 2, and as shown (down) in Fig. No. 1. During this operation, or as long as pressure is applied to the key in the room, a bell which is placed within the circuit is sounded, and immediately thereafter the number-plate is dropped down, exposing the same to full view. By this means the fact is made known at the office that the occupant of room No. 1 is in want of something. While this number (1) is down, should the occupant of room No. 2 in the same manner call by pressing on the key in his room, the current is again closed, dropping down the number-plate 2 to the hook or keeper G, and at the same time raising up and resetting number-plate 1 by drawing down the armature M to the magnet L, thus raising the slide N. By means of the pin *n* operating against the arm J, the inner part of the arm J is drawn into the opening of the armature D at such an angle as to raise the armature D, and allow it to drop again after the arm J passes the hook or keeper F.

It will be seen that, while the number-plate 1 is being carried up and replaced, number-plate 2 is held at rest on the hook G until the operation is completed, when, by the opening of the electric current, it is allowed to drop down by its own gravity. If this were not the case, or were it not for the office of the hook G, which holds the number-plate until the electric current is opened, both number-plates would be carried back by the upward movement of the slide N at the closing of the current.

It will be seen that by the attachment of the number-plates to the roller, at an upper corner or a lower corner, we succeed in raising out of sight or exposing to full view the same by a much shorter movement of the slide N than would otherwise be required were the plates attached at or nearer their centers.

By cutting off the magnet M, by means of the key O^2, the annunciator is changed from self-closing to hand-closing. When this is done the annunciator is reset by means of the roller Q, knob R, and arm *r*.

For the purpose of description we have described the operation of our annunciator as applied to two rooms; but any number of magnets can be used, as many as there are rooms in the building, all of which are constructed and operated in the same way.

Having thus described our invention, we claim—

1. An annunciator opened and closed simultaneously by the electric current by means of the magnets C and L, slide N, pins *n n*, armatures D and M; arm J, hooks F and G, swinging number-plate I, or their equivalents, substantially as described.

2. In an electric self-opening and closing annunciator, the armature hooks or keepers F and G, or their equivalents, substantially as described, and as and for the purpose set set forth.

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