2 Sheets—Sheet 1.

W. N. McINNIS.

Annunciator.

No. 101,372. Patented March 29, 1870.

Fig. 1.

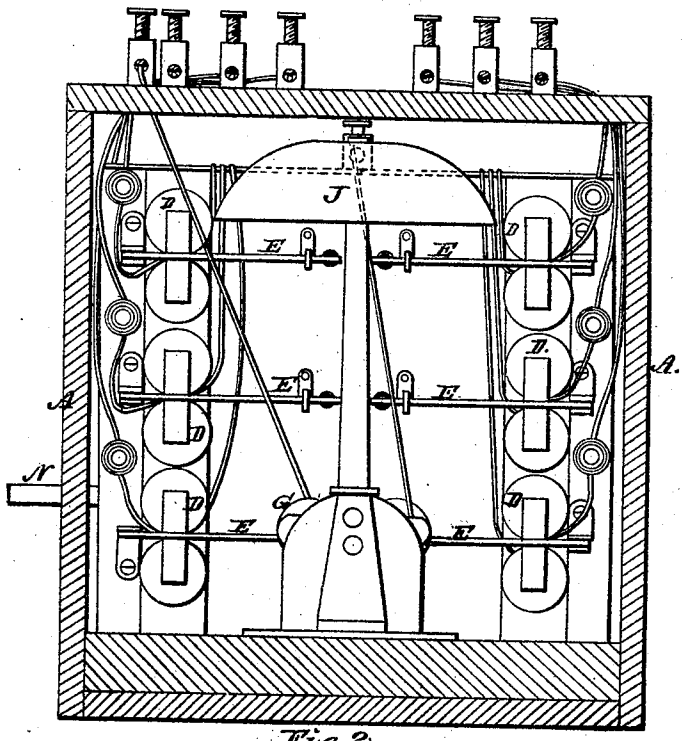
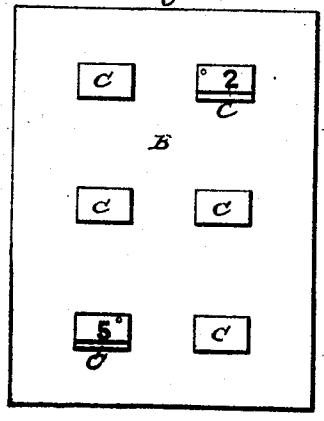


Fig. 2.



Witnesses.

F. Lehmann

C. L. Evert

Inventor.

Wm. N. McInnis.

per Alexander & Mason

Attys.

2 Sheets—Sheet 2.

W. N. McINNIS.

Annunciator.

No. 101,372. Patented March 29, 1870.

Fig. 3.

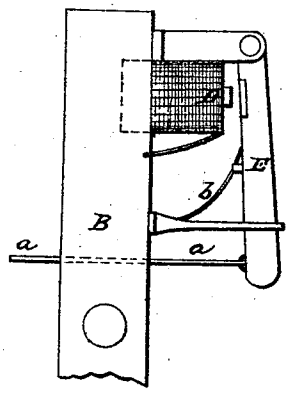


Fig. 4.

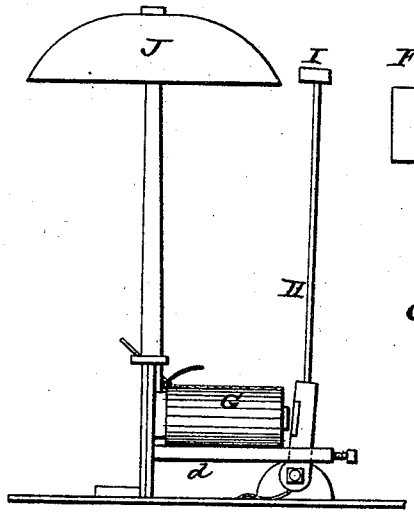


Fig. 5.

Fig. 6.

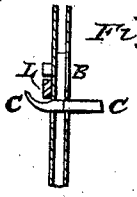


Fig. 7.

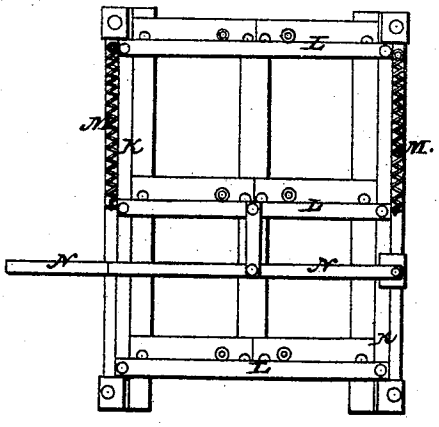
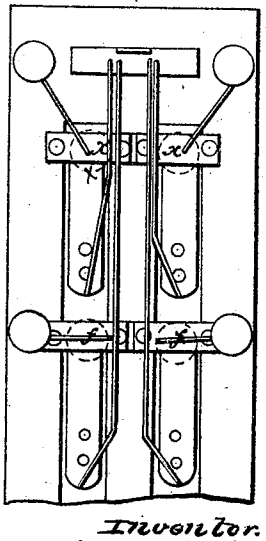


Fig. 8.



Witnesses.

F. Lehmann

C. L. Ewert.

Inventor.

Wm N McInnis.

per Alexander Thomson

attys.

United States Patent Office.

WILLIAM N. McINNIS, OF NORTHUMBERLAND, PENNSYLVANIA.

Letters Patent No. 101,372, *dated March* 29, 1870.

IMPROVEMENT IN ELECTRO-MAGNETIC ANNUNCIATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM N. McINNIS, of Northumberland, in the county of Northumberland and in the State of Pennsylvania, have invented certain new and useful Improvements in Electric Annunciator; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a "hotel annunciator," to be worked by electricity, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is an inside view of the annunciator;

Figure 2 is a front view of the plate on which the numbers are exposed;

Figure 3 is a plan view of the mechanism operating one of the falling doors to expose the number;

Figure 4 is a side view of the bell and the mechanism for sounding the alarm;

Figure 5 is a front view of one of the falling doors;

Figure 6 is a vertical section showing one of the falling doors when down;

Figure 7 is an inside view showing the mechanism for raising one or more or all of the falling doors; and

Figure 8 is a rear view of a block showing the device arranged within each room to operate the annunciator.

A represents the frame or box of my annunciator, having on the front side a plate, B, provided with equidistant openings, through which the numbers can be seen.

These spaces are all provided with doors, C C, of the peculiar shape shown in fig. 5.

The narrower portion of the door C being intended to close the aperture in the plate B, said narrower space being passed from the inside outward at the lower edge of the aperture, the wider portion preventing it from falling out. This wider portion is slightly concave, as seen in fig. 6.

The door being thus hinged or pivoted at the lower edge of the aperture, when it is pushed slightly from the inside at or near the upper edge, it will fall down and expose the number, but as soon as any pressure is brought to bear upon the inner curved end of the door, it will rise up and close the aperture, remaining in this position until again pushed outward, as already mentioned.

Although the size of the annunciator is immaterial, I will here state what I consider large enough for all practical purposes. A space two inches long by one inch wide will be the actual space allowed for each number, so that a surface of two feet square will represent two hundred and eighty-eight numbers.

Each space or compartment is furnished with a small magnet, D, and armature E, hung on pivots, the lever or armature E being provided with a pin, *a*, passing horizontally through a hole in the number, so that when the magnet, by means of electricity, attracts the lever, said pin will force the door C open.

A small spring, *b*, as seen in fig. 3, throws the lever outward again as soon as the electric current is broken.

These magnets are connected with main battery, the wire leading from said battery having, however, first passed around a magnet, G, which attracts a lever, H.

This lever has a hammer, I, on its outer end, and strikes the bell J.

A spring, *d*, throws said lever outward again from the bell as soon as the current is broken.

The main battery is connected by one wire with the magnet G, and after leaving the same it is branched off, so that one wire leads to each of the magnets D D. Insulated wires are then strung from each magnet to the rooms represented by the compartment containing the magnet. These wires are attached to a spring button in each room, which is fastened in the wall.

A connection is made between a piece of metal, *x*, imbedded in the wall immediately under the spring button and the gas-pipe or other ground connection.

In fig. 8 I have represented a board with such devices for forming the connection, but as I do not lay any claim to the same, I do not deem it necessary to further explain the same. Anybody versed in electricity will know how this is to be arranged.

Whenever such connection is made by the pressing of the spring button, the corresponding armature or lever will be attracted by its magnet, and the number will be exposed; at the same time the alarm will be sounded.

On the inner side of the front plate B is a sliding frame, K, having as many horizontal cross-bars L as there are rows of numbers to be exposed.

This frame is held up by means of a spiral spring, M, on each side, so that the cross-bars will be entirely out of the way, and allow any or all of the falling doors C to drop down and expose the number.

By means of a lever, N, pivoted to said frame and to the plate B, its outer end extending through a vertical slot in the side of the box A, the sliding frame K is moved downward. This makes the cross-bar L bear down upon the curved portion of the door or doors which are down, raising said door or doors up

again. The springs M M cause the sliding frame to move up again as soon as the force is removed from the end of the lever N.

The dropping of the doors C C to expose the numbers will make it unnecessary to have the magnets produce so strong a motive power, and thereby increases the effectiveness of the machine, while it reduces the cost of the magnets.

My annunciator can be worked with either one or two batteries; with one battery by allowing the current to act simultaneously on the magnets that expose the numbers, and the magnets that ring the alarm; with two batteries by having an independent battery for the alarm, and so arranging its circuit wires that the dropping of the levers or armatures of the number-magnets would close the alarm-circuit and ring the bell. The latter will be used only when a loud alarm is needed.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the magnet D, lever or armature E, pin *a*, and spring *b*, all substantially as and for the purposes herein set forth.

2. The falling door C, constructed as described, and operating substantially in the manner and for the purposes herein set forth.

3. The arrangement of the sliding frame K, with cross-bars L L, springs M M, and lever N, substantially as and for the purposes herein set forth.

4. The arrangement of the magnet D, lever E, pin and spring *a b*, falling doors C, frame K, with bars L, springs M, lever N, and magnet G, lever H, with hammer I, and spring *d*, for operating the bell J by electricity, all substantially as set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 1st day of December, 1869.

WM. N. McINNIS.

Witnesses:

J. A. MYERS,

C. L. EVERT.