

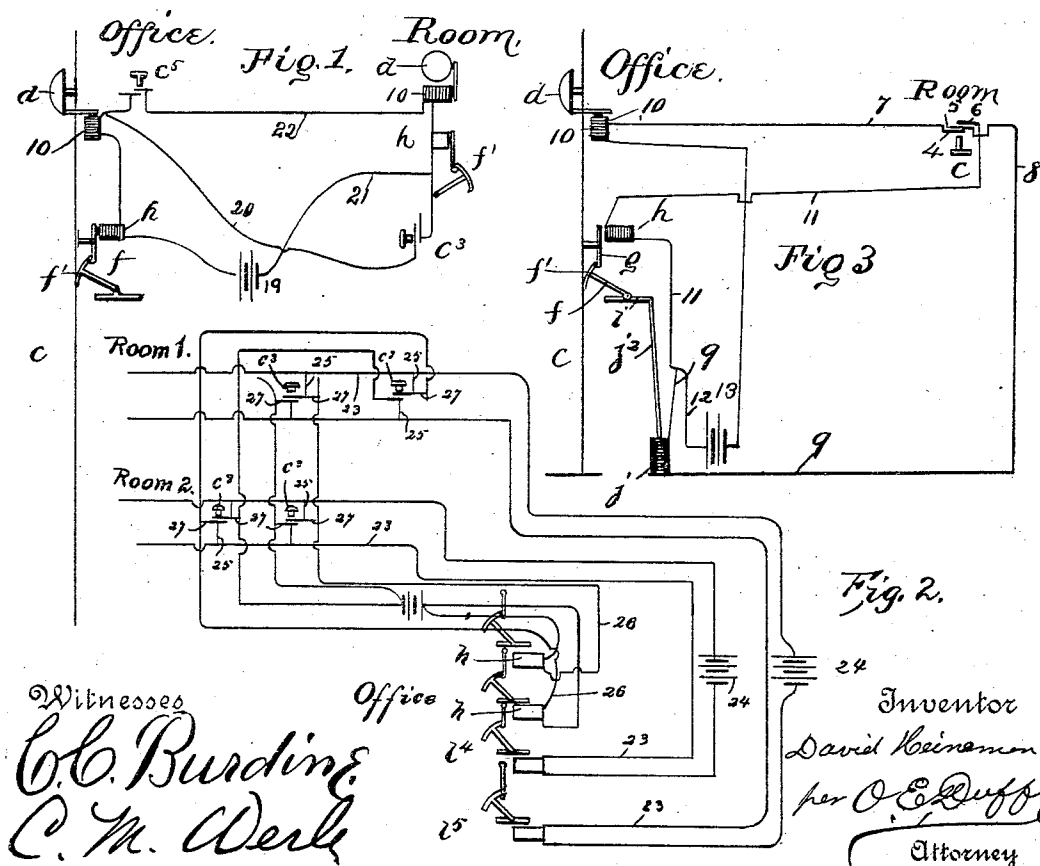
(No Model.)

2 Sheets—Sheet 1.

D. HEINEMAN.
ANNUNCIATOR.

No. 466,870.

Patented Jan. 12, 1892.



UNITED STATES PATENT OFFICE.

DAVID HEINEMAN, OF WABASH, INDIANA.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 466,870, dated January 12, 1892.

Application filed March 16, 1891. Serial No. 385,317. (No model.)

To all whom it may concern:

Be it known that I, DAVID HEINEMAN, of Wabash, in the county of Wabash and State of Indiana, have invented certain new and useful Improvements in Annunciators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in signaling apparatus, and more particularly to an improved annunciator.

The object of the invention is to provide an improved signaling apparatus or annunciator adapted for various uses, whereby when a button is pressed an answer or certain information or a certain call is displayed. These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figures 1, 2, and 3 are diagrammatical views illustrating the use of the invention in hotels and other places. Figs. 4 and 5 are respectively a front elevation and vertical section of the present construction of electric annunciator.

The annunciator primarily comprises a series of removable cards provided with means for withdrawing or displaying the same and a series of buttons corresponding with the series of cards, each button having notice on or in proximity thereto signifying which card will be displayed when the button is pressed. Thus a certain question might be printed on the button and when that button is pressed the answer to this question will appear on the card.

The annunciator consists of the outer or vertical inclosing case *a*. The front of this case is provided with a series of openings *b*, located at any suitable part of the case, and a series of push-buttons *c*, corresponding to openings *b*. The electric bell *d* is suitably located on or in the case. A vertical swinging lever *f* is located behind each opening,

and each lever carries a plate *f'* on its outer end to receive the card which contains the information or other statement it is desired to display, each horizontal series of levers being mounted on a horizontal rod *f¹*, as shown. The upper end of each plate carried by the lever is provided with the beveled shoulder *f²*, and a magnet-armature *g* is pivoted above each of said plates and provided with a corresponding shoulder *f³* on its lower end to engage the shoulder of the plate and uphold the plate and lever above the opening for the plate when the armature is in its normal position, as shown, the armature being provided with a suitable spring for holding it away from the magnet *h*. Each lever and plate is provided with such magnetic holding and dropping mechanism, one plate and its acting mechanism only being shown to avoid confusion of parts. It is evident that when the circuit of a plate is closed its magnetic device will operate and its armature will be drawn in, thereby dropping the plate behind its opening and displaying the characters thereon through the front of the case. A lifting-lever *i* is mounted on the same rod *f¹* with each series of said card or plate levers, and the front end of each lever *i* carries a horizontal rod *i'*, located beneath the front ends of the series of plate-levers on rod *f¹*, and said rod *i'* limits the downward movement of the card-levers, and also lifts the same when the lifting-lever is operated. All the lifting-levers of the different series have their rear ends connected by connections *j²* to the vertically-movable core *j'* of the electromagnetic coil *j*, suitably secured in the lower portion of the case, so that when the circuit including said magnet is closed its coil will be drawn down, thereby rocking all the lifting-levers and throwing up their front ends and returning all of the card or plate levers to their normal raised position.

Behind the push-pin 1 of each push-button a vertical separated insulated plates 4 5 6 are located. These plates are formed of conducting material. The first plate 4 is in contact with said push rod or bar and the other two plates are located behind the same, so that when the push-bar is pressed in the three plates will be pressed together and will spring to their normal position when the push-bar is released. The first spring 4 of the push-but-

ton is connected by wire 7 with one pole of the battery through the electro-magnetic actuating means 10 of the signal or alarm bell.

Spring 5 is connected by wire 8 to conducting-rod *m* and by wire 9 to conducting-rod *n* through the magnet *j* of the lifting or restoring mechanism before described and with the other pole of the battery 13 by the wire 12 from rod *n*. The last contact-spring 6 is connected by wire 11 to rod *n* and includes the particular plate-dropping magnet *h* operated by that particular button, and said rod *n* is connected to the opposite pole of the battery by wire 12, as before described.

The contacts 5 of all the push-buttons are connected to the metal conducting-bar *m* at the back of the case, and said rod and all of said contacts are connected to the magnet *j* by single wire 9, which wire 9 also connects said magnet to rod *n*, and consequently to battery. All of the wires from the plate-dropping magnets are connected to conducting-rod *n*, as set forth, thereby reducing number of connections to battery. Hence when the push-rod of the push-button is pressed in slowly the first two springs 4 and 5 will engage, thereby closing a circuit through the alarm-bell-operating mechanism, sounding the bell, and the battery and the lifting or restoring magnet thereby restoring all levers to their raised or normal position, and as the push-rod of the push-button is still further pressed in all the spring-contacts engage, thereby closing a circuit through the operating-magnet for dropping the card of that push-button, thereby releasing the card-lever and displaying the card represented on said push-button, as the magnet *j* is of greater resistance than magnets *h*.

It is obvious that instead of having the push-buttons in the circuits located on the annunciator they can be located at any distance from the annunciator.

It should be understood that when the push-buttons or circuit-closers are located elsewhere (see Figs. 1, 2, and 3) than on the annunciator-case itself no circuit-closers are located on the case. The circuit-closers are shown on the case in Figs. 4 and 5 merely to fully illustrate the invention and show the specific wiring, (not shown in Figs. 1 and 2,) and which is substantially the same whether the circuit is closed at the case or in a room.

The annunciator might be located in the office of a hotel and push-buttons to operate the same located in every room in the building, the circuits being substantially the same as herein described. The push-buttons are not usually on the case, as shown.

The card-holders are preferably made to detachably receive and hold a card upon which is written an order or orders or certain information, &c., and a corresponding button is provided with the same order or information. The order or information of each card can thus be changed at any time.

This electrical machine, while particularly

intended for use in hotels, is adapted for other uses, as an electric novelty to attract attention, such as in railroad stations or cars to answer questions pertaining to the arrival and departure of trains or other information, each button being provided with a question such as "Is train No. 42 east on time?" and the card-holder controlled by such button will carry a card upon which the person in charge has written the answer to the question. In fact any information concerning the trains can be placed on the holders and the corresponding questions placed on corresponding buttons; also, it can be used on railroad-locomotives and connected through the train; so that the conductor can issue certain orders to engineer, and can be placed on cars to give passengers any information whatsoever, as stops, connections with other trains, changes, &c. It is of great value in factories or other places where the noise is so great that orders cannot be given orally for use by foremen in dictating orders or communicating with their workmen, and also in auctioneering-houses to show bids as made. When used in a hotel, each room is provided with such an annunciator, and all the room-annunciators connect with and operate on the single office-annunciator. It can also be used as a dictator in ordering anything at a restaurant or other place or for awakening hotel guests. At the same time that the bell is rung a card is dropped to show time.

Fig. 1 shows diagrammatically an operating-circuit for a card-holder in the office and a card-holder in the room. When the particular room-button *c*³ is pressed, a circuit is closed over wires 20 and 21 and through battery 19, ringing bell *d* and actuating magnet *h* to drop card-holder *f*³, and when the office wishes to send particular message to room button *c*⁵ is pressed, closing circuit through wires 21 22, battery, and actuating-bell, and dropping particular card in the room. Each particular card of each room-annunciator is connected with the office-annunciator by a suitable circuit, such as shown. By means of this arrangement of Fig. 1 messages can be transmitted to office and can be immediately acknowledged, or messages can be sent from office to rooms.

Fig. 3 discloses the simplest circuit possible between each room-button and actuating-magnet of card-holder controlled thereby, and also shows the circuit for restoring the drops.

Fig. 2 shows another arrangement of circuits whereby when any button *c*³ in a room is pressed to display a particular card in the office the bell in the office will be sounded, the card will be displayed, and another card will be displayed, indicating the room from which the signal was transmitted. This diagram shows the circuits for operating two cards at the office from two rooms, and also the circuits for dropping the cards, carrying numbers of such rooms when an order is transmitted from the room.

7⁴ and 7⁵ respectively indicate the electro-magnetic devices at the office which display the number of each room. Each magnet of such room-displaying device has a normally-open operating-circuit 23 extending to its particular room and including a battery 24, and having each card-dropping button c³ in the room included in shunt-circuits 25, as shown, so that said circuit 23 will be closed and the room-number card dropped wherever any button c³ in that room is closed to drop any order-card. In this arrangement the operating-magnet of each card-dropping arrangement is provided with a normally-open operating-circuit 26, extending to every room and having a push-button c³ in a shunt-circuit 27 in each room. It is obvious that this question or button can be applied to many uses not herein mentioned.

20 What I do claim is—

1. In combination, a drop and its controlling-magnet, restoring or raising mechanism for the drops and a controlling-magnet therefor, an electric alarm, a battery, a circuit-closer for each drop having three contacts, and the circuits arranged so that when said contacts of a circuit-closer are brought into contact the restoring mechanism will be actuated and then the particular drop will be displayed and the alarm sounded, as set forth.

2. In an annunciator, the combination of the swinging levers provided with card-plates at their outer ends having beveled shoulders at their upper edges, the drop-controlling magnets, the armatures therefor mounted above their respective drops and having beveled shoulders at their lower free ends to engage said shoulders of the plates and uphold them, each armature yieldingly held in its normal position, holding up its drop by a spring, the

vertically-swinging restoring-levers provided with rests at their outer ends to hold said drops when lowered, and a single electro-magnetic means connected to the opposite ends of all of said levers to swing them together to restore all of the drops and controlling-circuits, substantially as described.

3. The combination, in an annunciator, of the vertically-swinging drops and their controlling-magnets, the vertically-swinging restoring-levers carrying rods at their front ends forming stops for said drops, and a restoring-solenoid and its core connected to the rear ends of said restoring-levers to swing the front ends of all the levers up and restore all of the drops and controlling-circuits, substantially as described.

4. In an annunciator, the combination of the case, the drops and their controlling-magnets, the restoring mechanism comprising a single magnet and swinging levers, the electric alarm, a circuit-closer for each drop, comprising three separated spring-plates and means to press them together, the conducting-rods *m n*, a connection from a plate of each circuit-closer through the alarm, battery, and to rod *n*, a connection from rod *n* to the restoring-magnet and from the restoring-magnet to rod *m*, a connection from another plate of each circuit-closer to rod *m*, and a connection from another plate of each circuit-closer through its respective drop-magnet to rod *n*, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DAVID HEINEMAN.

Witnesses:

ANDREW J. ROSS,
WM. R. COLLINS.