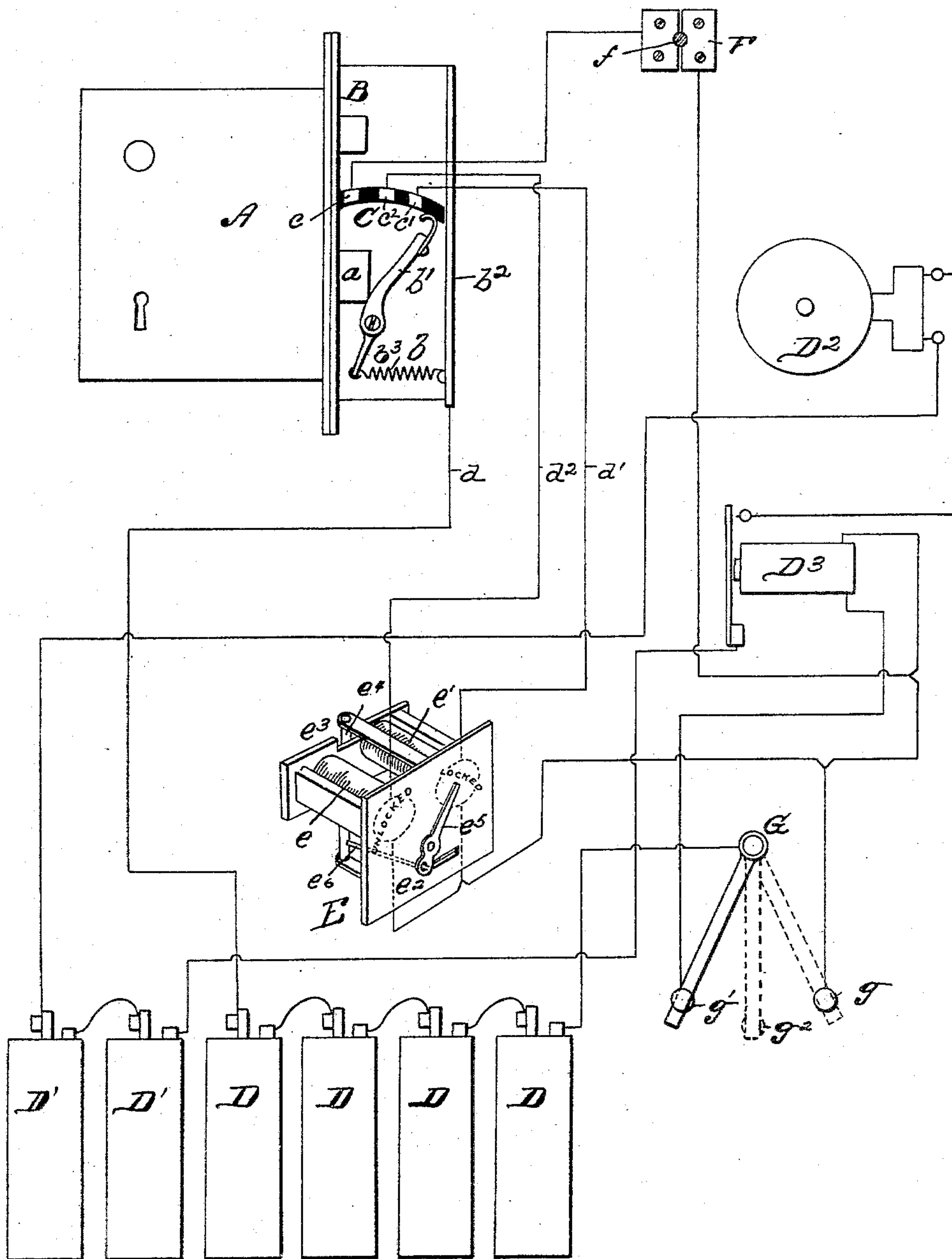


(No Model.)

J. M. ARTHUR.
ANNUNCIATOR SYSTEM FOR BUILDINGS.

No. 563,724.

Patented July 14, 1896.



WITNESSES

J. H. V. Hager
G. M. Davis

INVENTOR

John M. Arthur
By Est. Shouse
att'y-

UNITED STATES PATENT OFFICE.

JOHN M. ARTHUR, OF DETROIT, MICHIGAN.

ANNUNCIATOR SYSTEM FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 563,724, dated July 14, 1896.

Application filed April 1, 1896. Serial No. 585,686. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. ARTHUR, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Annunciator Systems for Buildings; and I declare the following to be a full, clear, and exact description of the invention, such as it pertains to make and use the same, reference being had to the accompanying drawing, which forms a part of this specification.

My invention relates to an electrical signal system for indicating at a central station, such as an annunciator, whether each door in a building is locked or unlocked.

One purpose of my invention is to provide means whereby a person entering the hallway of an office-building can determine from an indicator whether the party he desires to see is in or out of his office.

I am aware that a system has been so arranged that the occupant of an office can push a button in the office and operate an indicator elsewhere to indicate that he is in, and push another button to set the indicator to signal that he is out. Many office-buildings have been fitted with the device just mentioned, but the arrangement has been unsatisfactory, because neglect on the part of the occupant to operate the device would cause it to be misleading. In my system the annunciator is operated automatically when the occupant of an office locks or unlocks the door. The moment he enters the office the annunciator indicates that he is in, and the moment that he leaves and locks the door it indicates that he is out.

Another advantage in the system is that the watchman can always determine if all offices in the building are locked. The same device can be used for dwelling-houses to indicate whether doors or windows are locked or unlocked; also in jails or prisons to indicate when the doors of the cells are locked or unlocked.

My invention is shown in the accompanying drawing, representing a diagrammatic view of a door-lock, battery, annunciator, bell, and wiring.

In the drawing, A is the door-lock, B the

face-plate set in the door-frame, and *b* a recess back of it.

a is the bolt of the lock adapted to be operated by a key. 55

b' is a vibrating lever pivoted to a metal backing *b*² in the recess *b*.

*b*³ is a spring acting on the lower end of the lever *b'*, by which it is made to resist the action of the bolt *a*. 65

C is a curved arm extending inward from the face-plate. This arm is formed of alternating sections of conducting and non-conducting material, the three portions of conducting material being lettered *c c' c*², respectively. 65

D D represent the several cells of the battery used for operating the annunciator E, and D' D' those used to operate the bell D².

D³ is the relay by which the intermittent current is supplied to the bell. 70

The annunciator consists of the two spools *e e'*, each attached to the plate *e*², the armature *e*³, mounted on the vertical shaft *e*⁴, the index *e*⁵, and the rod *e*⁶, by means of which the index *e*⁵ is caused to vibrate from one position to another as the armature rocks the shaft *e*⁴. 75

The operation of my device is as follows: When the door is locked, the several parts take the position shown in the drawings, with the end of the lever *b'* resting on insulating material at the outer extremity of the arm C, and the index pointing to the word "Locked" on the annunciator. When the bolt *a* is withdrawn on unlocking the door, the lever travels over the curved arm C, coming first in contact with the conducting material *c*², thereby closing the circuit from the battery D D, through the wire *d*, the back plate *b*², the lever *b'*, the wire *d'*, and around the spool *e'* to the battery. This still leaves the index pointing to the word "Locked," as shown in the drawing. The lever *b'* next comes in contact with the conducting material *c'* on the arm C, by which the current is caused to take the wire *d*² and pass around the spool *e*, reversing the armature and thereby moving the index, so as to point to the word "Unlocked." The lever then rests in contact with the conducting material *c* with a current through the switch F and the bell, if the pin *f* be in 80 85 90 95 100

place in the switch, or with an open circuit if the pin be removed.

When the door is locked, the operation described is reversed, and the index caused to point to the word "Locked."

The switch F is for use when it is desired to set the device so that it will sound the bell, as well as indicate when a door is unlocked.

The switch G is used to open and close the main circuit, either direct or through the bell, as desired. When set on the pole g , it closes the main circuit direct. When on the pole g' , it closes the main circuit through the bell, and when on the pole g^2 the current is open.

The function of the three contacts c' , c^2 , and c^3 is to provide means whereby the annunciator can be operated through a succession of impulses by the magnets in the annunciator, to result in the movement of the indicator in opposite directions at the proper time, and at the same time to leave the circuit open at each extremity of the movement of the lever b' to prevent exhausting the battery. I find that the arrangement of the three contact-points in the order shown is the preferable form for producing the result.

I am aware that devices have been used adapted to indicate when a door or window is opened for the purpose of sounding an alarm, but I am not aware that a device has ever been used to indicate either condition, whether locked or unlocked.

I claim—

In an annunciator system for buildings, an electrically-operated annunciator adapted to display alternately the words "Locked" and "Unlocked," or words of like significance or for like purpose, wires connecting the annunciator with means in connection with each door for opening and closing the circuit through the annunciator, said means operated by the lock of the door whereby the annunciator is so operated as to indicate the word "Locked" when the bolt of the door is forced out, and "Unlocked" when the bolt is withdrawn, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN M. ARTHUR.

Witnesses:

C. H. FISK,

S. E. THOMAS.