(No Model.)

W. R. McCANN & S. S. CREIDER.

ANNUNCIATOR.

No. 457,454. Patented Aug. 11, 1891.

Fig 1

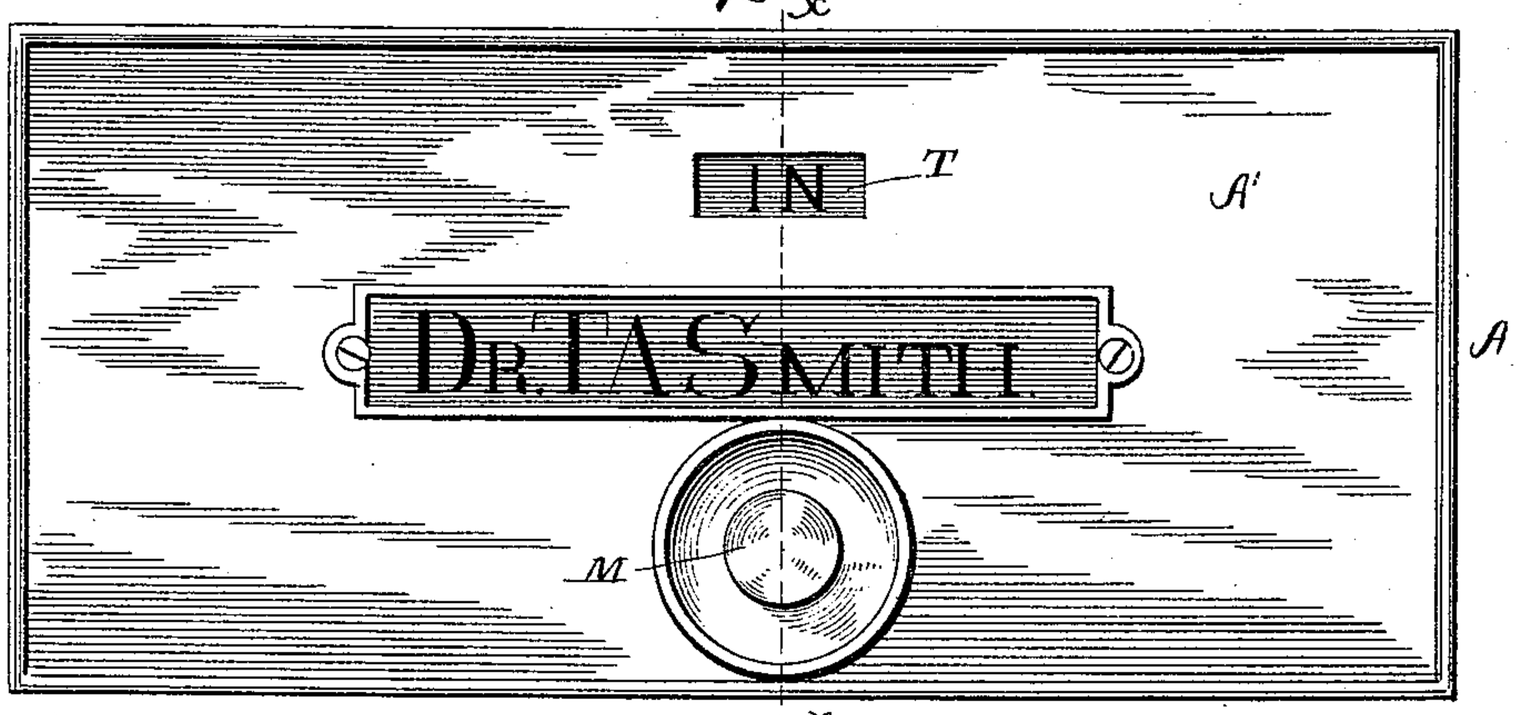


Fig 2

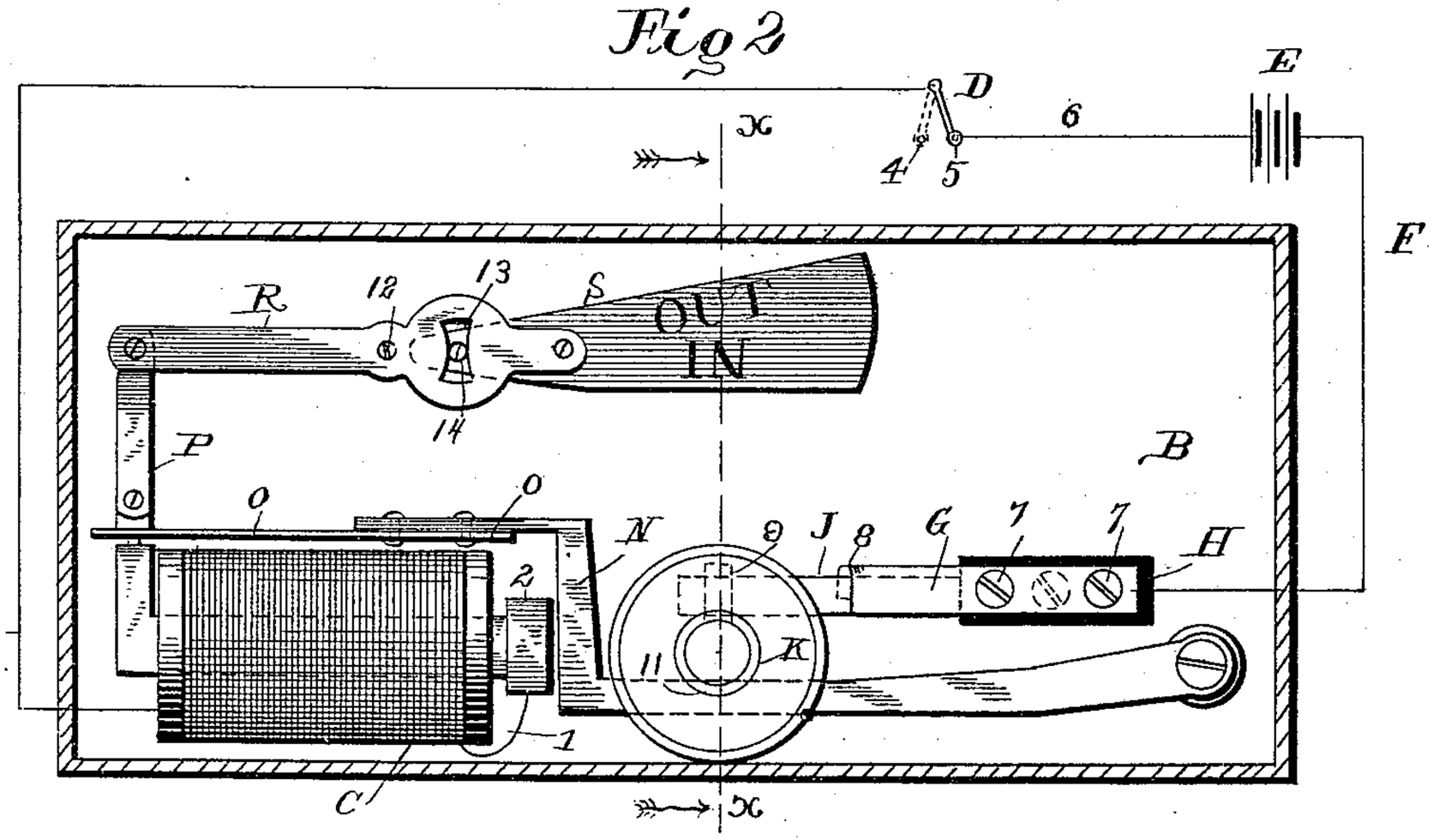
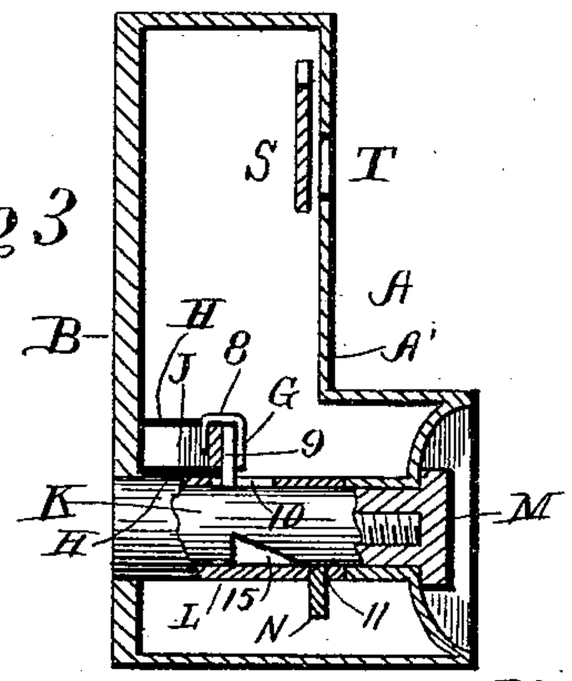


Fig 3



Witnesses
C. C. Burdine
H. P. Wilson.

Inventors.
W. R. McCann
S. S. Creider
per
John G. Manahan
their Att'y

UNITED STATES PATENT OFFICE.

WALTER R. McCANN AND SIMON S. CREIDER, OF STERLING, ILLINOIS.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 457,454, dated August 11, 1891.

Application filed April 23, 1891. Serial No. 390,206. (No model.)

To all whom it may concern:

Be it known that we, WALTER R. McCANN and SIMON S. CREIDER, citizens of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Annunciators; and we do declare the following to be a full, clear, and exact description of the invention, such as 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 a part of this specification.

Our invention has reference to improvements in annunciators in which the information furnished is in the alternative, and one alternative is produced solely by mechanical action—that is to say, by pressure upon an exposed button—and the other alternative is effected by the aforesaid mechanical action, supplemented by an electro-magnetic action. In the latter alternative, the electric circuit being closed by the aforesaid mechanical action and an actuating-lever having been by said action brought within the field of a magnet, the attraction of the latter exerted upon said lever complements said mechanical action with sufficient auxiliary movement to produce the other alternative.

Our invention by obvious changes is adaptable to various purposes; but one of its chief situations of usefulness will be to indicate at the ground entrance or lower hall of a building the presence or absence of the respective occupants of the several rooms of said building. For this purpose certain hereinafter-described mechanism will be located at the aforesaid hall or entrance and provided with a push-button. The necessary batteries and a magnet are suitably arranged in connection with the aforesaid mechanism and a switch-board connected therewith placed in the room of said occupant. The lower situated mechanism aforesaid will be provided with a visual opening covered with glass, and when the circuit is broken in the occupant's room the pressure of the button will elevate a card behind said opening which will bear the word "Out," and when the circuit is closed in the occupant's room the action of the magnet supplementary to the pressure of the button will display behind said opening the word "In."

The mechanism involved in the foregoing application of our invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of the exterior of the box located in the hall or on the lower floor aforesaid and containing the mechanism at the lower end of the aforesaid circuit. Fig. 2 is the same as Fig. 1, with the outer cover of said box removed, and includes a miniature illustration of the connecting-wires and upper end of the circuit. Fig. 3 is a detail in vertical cross-section in the line $x\,x$ of Fig. 1.

A is a box having a metallic back B and a front A′, preferably of metal, and which can be ornamented as desired.

C is an ordinary magnet suitably seated within the box A, the end wire 1 of which is suitably connected to the back B through the stud 2, rigidly formed on the latter, and the other wire 3 of said magnet is carried to the electric switch D in the upper room or wherever said switch may be located. The latter is adapted to be oscillated against a stop 4 when the circuit is open and against a switch-point 5 when it is desired to close the circuit. The switch-point 5 is suitably connected by the wire 6 to an ordinary battery E, from which a wire F is extended to a spring-plate G, insulated on the back B by means of transverse screws 7 7, passed through said plate into the rubber insulation H, interposed between said spring-plate and a second spring-plate J between said insulation and the back B, said plate J being held in contact with the back B by means of a transverse screw countersunk in the insulation H and concealed by the plate G. On the inner end of the plate G is formed laterally a hook 8, which is folded over the upper edge of the projected end of the plate J, either or both of said plates being bent laterally sufficient to permit said connection. When said plates are in a normal position, they are not in contact, the looped end of the plate G passing over and within or beyond the plate J without touching the latter. The horizontal push-pin K, adapted to reciprocate in a suitable sleeve L, seated

transversely in the box A, is provided with an upwardly-projecting pin 9, which is always in contact with the outer surface of the inner end of the plate J. A longitudinal slot 10 in the upper wall of the sleeve L permits the pin 9 to be carried in and out on the push-pin K. When the latter is pressed inward by the operator through the medium of the rubber button M, Fig. 1, seated on the outer end of pin K, the pin 9 crowds the end of plate J inward until the inner surface of said plate J is crowded against and comes in contact with the outer face of the hook 8 of plate G, and the circuit is thereby closed at its lower or box opening.

Assuming now that the upper end of the circuit is open, no electric action occurs, and the aforesaid pressure of the button M indicates that the occupant of the upper room is out by the following mechanism: A lever N is pivoted at its outer extremity to the back B, and projecting inwardly under the pin K through a vertical transverse slot 11, formed in the lower portion of the sleeve L, is bent upward and carried thence horizontally over the magnet C and attached to the iron armature O, which latter forms a prolongation of lever N. A vertical arm P is pivotally attached at its lower end to the upper surface of the armature O, and at its upper end to the long end of the vertical lever R, pivotally seated at 12 on the back B, and provided in its short end with a vertical transverse slot 13. To the short end of the lever R, near its extremity, is pivotally attached a secondary lever S, which latter is pivotally seated at its short end on the back B by means of a transverse pivot 14, which projects through the slot 13 of lever R, said slot permitting the vertical oscillation of lever R involved in its lifting and lowering lever S. In the central upper portion of the front A′ is formed a visual opening T, protected by mica or glass. The free end of the lever S is provided on its outer face with the word "Out" near its upper surface and the word "In" below said word "Out," said words being projected on slightly-divergent lines.

In Fig. 3 the pin K is shown at the limit of its instroke, in which position the lever N has been forced downward by the inthrust of said pin a sufficient distance to elevate through the medium of the armature O, arm P, and lever R the word "Out" into the plane of and visible through the opening T, and that degree of mechanical depression of the outer end of the armature O has brought the latter within the field of the magnet C, and the circuit being closed at its upper portion, as shown in Fig. 2, the attraction of said magnet has farther depressed the lever N by drawing downward the armature O and farther elevated the free end of lever S to such degree as to raise the word "Out" above the opening T and bring instead the word "In" into view through said opening. The depression of the lever N by means of the pin K is effected through a transverse recess 15, formed in the lower portion of said pin, having an inner vertical wall and an outward oblique wall, the latter of which terminates in a horizontal portion. When the parts are in their normal position, the pin K is thrown to and held at the limit of its outstroke by the elasticity of the plate J, exercised against the inner surface of the vertical pin 9, and when the parts are in said position the lever N, by the gravity of the free end of the lever S, is held up into the deepest portion of the recess 15, in which position the free end of the lever S and its indicating-words drop down automatically below the opening T and behind and are concealed by the front plate A′.

When the occupant of the room is out or desires to so announce himself, he simply breaks the circuit by throwing the switch-lever D off the switch-point 5 and against the stop 4. The magnet C would of course then exert no influence in drawing down the armature O beyond the point where the same is depressed through the mechanical action of the pin K upon the lever N. This degree of depression is accomplished by the passing of the oblique wall of the recess 15 over the lever N, and is sufficient to depress the lever R only to a degree that will raise the word "Out" into view through the opening T. When pressure is removed from the button M, the force of the plate J, exerted against the pin 9, throws the pin K out, and the free end of the lever S with its designating-words drops by gravity below the opening T and draws the lever N up into the recess 15.

When it is desired to utilize the apparatus so that the designating devices may be controlled wholly from the occupant's room, the pin K may be fastened at the limit of its instroke by screwing the button M into the orifice in which said pin is seated in the plate A′ or in any other obvious manner, in which situation the lower portion of the circuit may be closed for any desired period, and the upper portion can be optionally opened or closed by manipulating the switch-lever D, when the disclosed information at the opening T will be optionally "In" or "Out." When the upper and lower ends of the circuit are both open, inward pressure on the button M will mechanically raise "Out" into view. When only the upper end of the circuit is open "Out" remains in view, and the closing of said upper end holds "In" in view. When the said upper end is closed and said lower end open, pressure on the button M will mechanically raise "Out" to the opening T and coincidently close the circuit, when the magnet will continue the movement and bring "In" into view.

The indicating-words aforesaid are of course illustrative of only the specific use described.

In other applications of our invention any words or figures selected to communicate the information intended to be given will be substituted for these.

What we claim as our invention, and desire

to secure by Letters Patent of the United States, is—

1. The combination of an indicating device, a mechanical actuator therefor, a circuit-closer controlled by such actuator, and a magnet included in a circuit with said circuit-closer, said magnet also actuating said indicating device to increase its movement, substantially as and for the purpose described.

2. The combination of an indicating device, a mechanical actuator therefor, a circuit-closer controlled by such actuator, a magnet included in a circuit with said circuit-closer, said magnet also actuating said indicating device to increase its movement, and a switch D, adapted to optionally open or close said circuit, substantially as and for the purpose described.

3. The combination of a plate A′, provided with a visual opening T, an oscillating lever S, adapted to be suspended in various positions behind said opening and provided with indicating words or characters, a lever R, pivotally connected to lever S at one end and at its other end to a lever N provided with an armature O, a magnet C, suitably seated in an electric circuit, and means, substantially as shown, for mechanically depressing said lever N and moving said indicating letters or characters a certain degree when said circuit is open and for bringing said armature within the field of said magnet when said circuit is closed, substantially as shown, and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

WALTER R. McCANN.
SIMON S. CREIDER.

Witnesses:
JOHN G. MANAHAN,
ADDA E. WARD.