(No Model.)

L. BATES.

ELECTRIC DOOR OPENER.

No. 448,110. Patented Mar. 10, 1891.

Fig. 1.

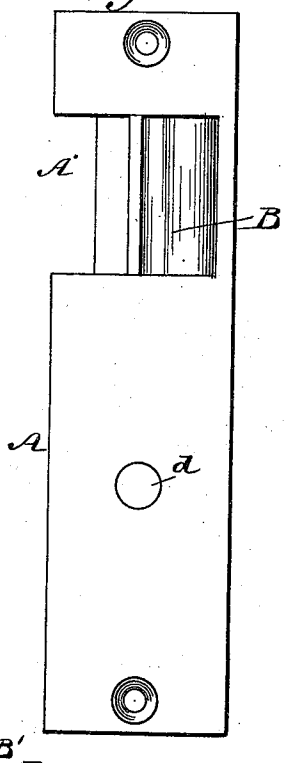


Fig. 2.

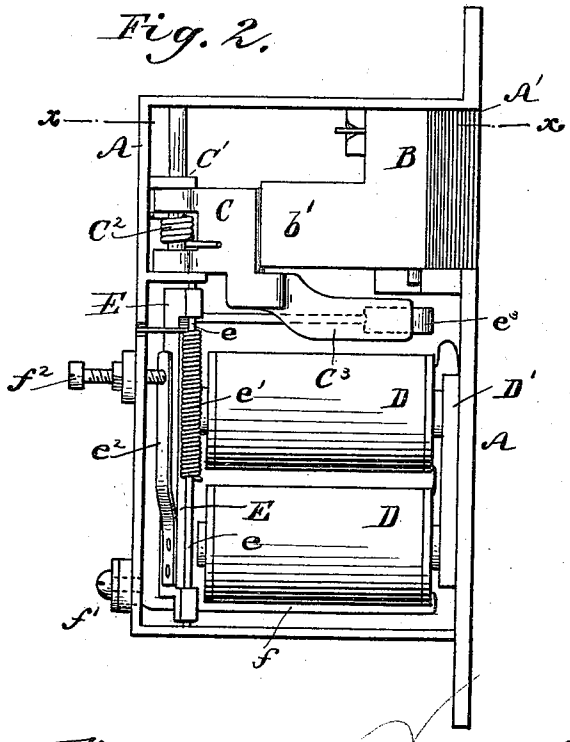


Fig. 3.

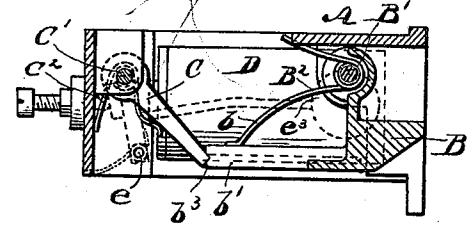
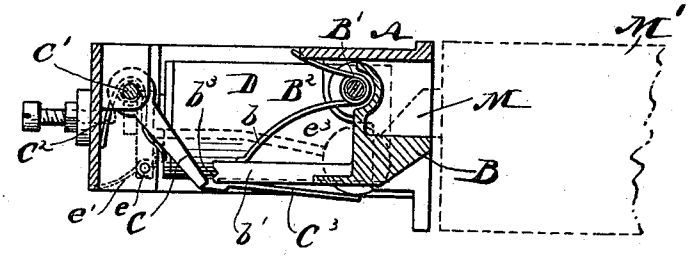


Fig. 4.



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UNITED STATES PATENT OFFICE.

LOUIS BATES, OF JERSEY CITY, NEW JERSEY.

ELECTRIC DOOR-OPENER.

SPECIFICATION forming part of Letters Patent No. 448,110, dated March 10, 1891.

Application filed July 14, 1890. Serial No. 358,596. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BATES, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Electric Door-Opener, of which the following is a full, clear, and exact description.

The object of my invention is to improve the efficiency of that class of electric door-openers wherein a pivoted latch is employed, which is held in closed position by a pawl which is pressed forward by a spring and adapted to be forced out of engagement with the pivoted latch by an armature controlled by electro-magnets; and to this end my invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front view of my new and improved electric door-opener. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional plan on line x x of Fig. 2, showing the locking-pawl engaged with the latch; and Fig. 4 is a similar view showing the locking-pawl detached from the latch.

A represents the casing of the door-opener, in an opening A′ of which is placed the latch B, pivoted on the pin B′ and acted upon by the spring B^2, the end b of which presses against the extension b' of the latch, as shown clearly in Fig. 3, to normally hold the latch pressed forward to retain the bolt M of the door, as shown in Fig. 4. The end of the extension b' is notched, as shown at b^3, to receive the locking-pawl C. This is pivoted on the pin C′ and is acted upon by the heavy coiled spring C^2, which normally holds the pawl in engagement with the notch b^3 for locking the latch B in its forward position, as shown in Fig. 3. Attached to the locking-pawl is the extension or arm C^3, which reaches forward nearly to the front of the frame A.

D D are the electro-magnets mounted on the plate D′, held in the frame by the screw d, and E is the vibratory armature pivoted on the pin e, acted on by the heavy coiled spring e', provided with the spring e^2, and at one end with the hammer e^3, arranged to deliver its strokes upon the end of the extension or arm C^3 of the locking-pawl. One terminal f of the circuit is attached to the binding-post f', while the other is attached to the screw f^2, the inner end of which makes contact with the spring e^2, as shown clearly in Fig. 2. By this arrangement when the circuit is closed the armature is rapidly vibrated, which causes the hammer e^3 to deliver rapid blows upon the arm or extension C^3, which forces the pawl from the position shown in Fig. 3 to that shown in Fig. 4, releasing the latch B, so that pressure upon door M′ will swing it back and permit the door to open. The circuit being now open, the spring B^2 will force the latch forward and spring C^2 will force the pawl into the notch b^3, thus locking the latch forward to hold the door when closed again.

As shown in Fig. 4, the projecting end of the door-bolt M is beveled, as usual. When the door M′ closes, such beveled portion of the latch M strikes the correspondingly-beveled latch B and is forced back, thus passing the opposing latch B without disturbing it, and thereby again locking the door.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The pivoted latch B, actuated by a spring B^2 and formed with an extension b', notched at b^2, and the locking-pawl C, actuated by a spring C^2 and formed with an arm or extension C^3, in combination with the electro-magnets D and vibratory armature E, provided with the hammer e^3, arranged to operate substantially as described.

LOUIS BATES.

Witnesses:
H. A. WEST,
E. M. CLARK.