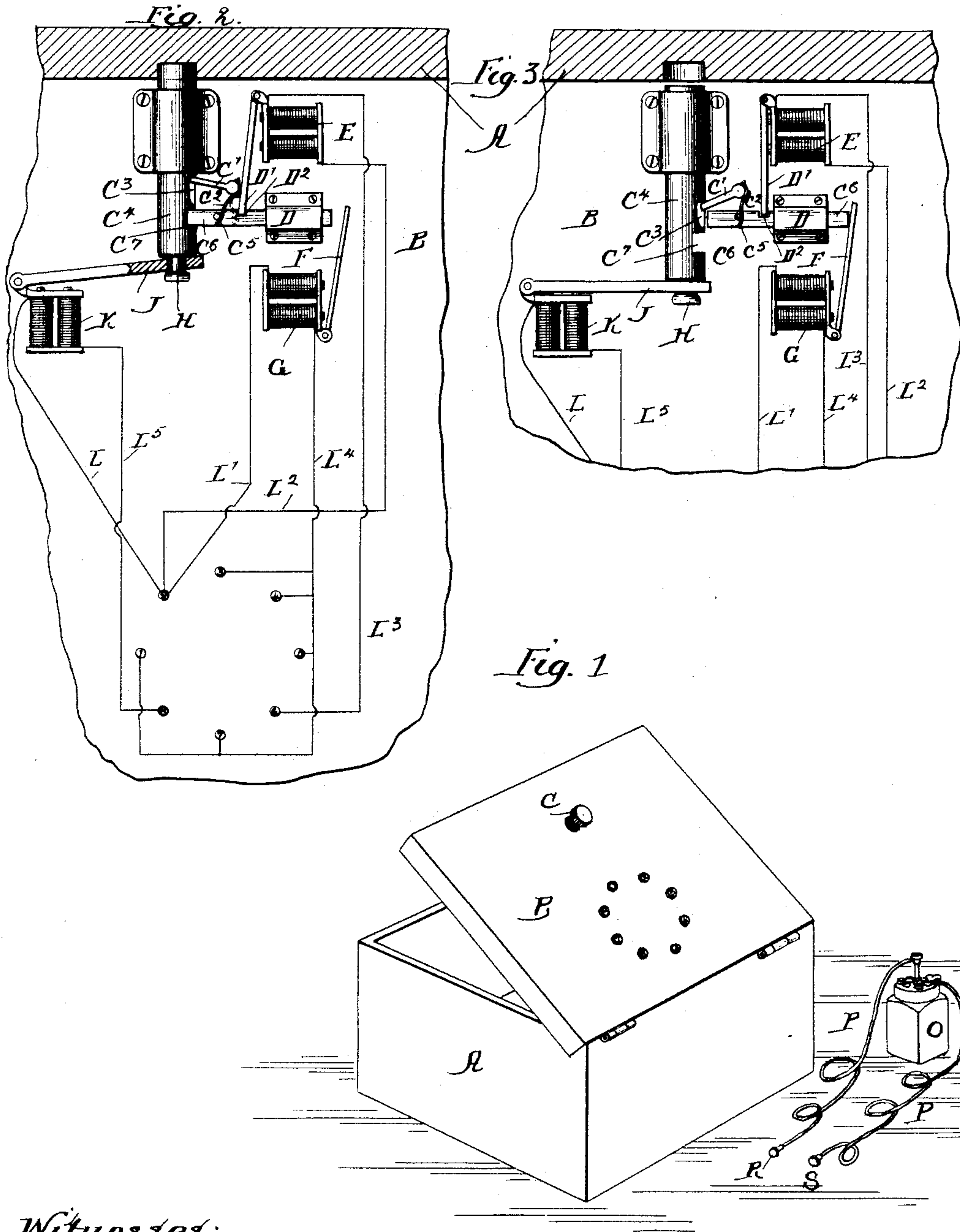


(No Model.)

E. J. COLBY.  
ELECTRIC LOCK.

No. 446,509.

Patented Feb. 17, 1891.



Witnesses:

Celeste P. Chapman.

David J. Johnson.

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# UNITED STATES PATENT OFFICE.

EDWARD J. COLBY, OF CHICAGO, ILLINOIS.

## ELECTRIC LOCK.

SPECIFICATION forming part of Letters Patent No. 446,509, dated February 17, 1891.

Application filed May 6, 1890. Serial No. 350,813. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD J. COLBY, a citizen of the United States, residing at Chicago, in the county of Cook, in the State of Illinois, have invented a certain new and useful Improvement in Electrical Safes, of which the following is a full, clear, and exact specification.

My invention relates to electrical safes or devices for locking the same, and has for its object to provide convenient means whereby a safe or receptacle may be closed, so that it can only be opened by an electrically-operating combination. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective view of a safe. Fig. 2 is a reversed view of the interior of the lid, and Fig. 3 is a portion of the same with parts shown in a different position.

Like parts are indicated by the same letter in all the figures.

A is the body of the safe, and B the lid. On the surface of the lid are the contact-points 1 2 3 4 5 6 7 8, and they extend through the lid to like contact-points 1 2 3 4 5 6 7 8.

C is a knob projecting upon the lid and capable of rotation, and having secured to its inner end the two arms C' C<sup>2</sup>, adapted, respectively, to rest in the recess C<sup>3</sup> on the bolt C<sup>4</sup> and to engage the pin C<sup>5</sup> on the bolt C<sup>6</sup>. When the knob is turned in the position indicated in Fig. 2, the bolt is driven home, so as to engage a suitable keeper on the interior of the safe A, and it is retained in this position by the bolt C<sup>6</sup>, which passes into the slot C<sup>7</sup> in the bolt C<sup>4</sup>. The bolt C<sup>6</sup> reciprocates through the keeper D, and is controlled by the armature D', which engages the slot D<sup>2</sup> in the bolt C<sup>6</sup>, and which is itself operated by the magnet E. The bolt C<sup>6</sup> is also capable of actuation by the armature F, which is controlled by the magnet G. On the end of the bolt C<sup>4</sup> is a knob H, by which the armature J is connected to such bolt. Said armature is controlled by the magnet K. From contact 2 leads conductors L, L', and L<sup>2</sup> to the three magnets. From contact 6 leads the conductor L<sup>3</sup> to the magnet E, and from all the other contacts leads the conductor L<sup>4</sup> to the magnet G, except from contact 8, and from this the conductor L<sup>5</sup> leads back to the magnet K. Thus a circuit is made through magnet K to con-

tact 8, and another from contact 2 through magnet E to contact 6, and a series of circuits from contact 2 through magnet G to contacts 3, 4, 5, 7, and 1.

O is a battery-jar having the conductors P P and the terminals R and S.

The use and operation of my invention are as follows: If the lid of the safe is closed, by turning the knob C in the position indicated in Fig. 2 the arm C' will engage the end of the recess C<sup>3</sup> and force the bolt C<sup>4</sup> home into a suitable keeper on the interior of the safe. Then the bolt C<sup>6</sup> engages the slot C<sup>7</sup> and securely locks the bolt in its position. Reversing the knob will have no effect upon the arrangement of the parts, as the arms can be retracted without engaging anything. At the same time all of the armatures will be found to be free or out of action, there being no current passing through any of the magnets, and the armature D' will engage the slot D<sup>2</sup>. If now it is desired to unlock the safe, the electric battery, with its terminals, may be employed for that purpose. There is nothing to distinguish one of the outer contacts from another; but the person familiar with the combination will know how to apply the battery, and he will apply it by placing one terminal on contact 2 and the other terminal on contact 6, whereupon a current will pass through the magnet E and will cause it to retract the armature D', and will retract the bolt C<sup>6</sup> and release the bolt C<sup>4</sup>. He will now remove the terminal from the contact 6 and place it upon contact 8, whereupon a current will pass through the magnet K and cause its armature to retract the bolt C<sup>4</sup>. Thus it will be observed that to open the lock it is necessary to know in the first instance the two terminals which will complete the circuit through magnet E, and in the second place to know exactly the two terminals which will complete the circuit through K, for if the wrong contacts are coupled in the first instance the bolt C<sup>6</sup> will not be retracted, and if it is retracted and the wrong pair of terminals is then connected this bolt will be returned to its position, for all the other terminals are connected with the magnet G. If several of the contacts are simultaneously connected, the various currents and magnets will oppose each other, so that no operation

will be had. Of course it is apparent that the combination can be varied at will by varying the connection of the several conductors with the contacts, and it will also be desirable to so construct the several magnets that the operation of the parts will be practically noiseless.

Many variations and alterations of my device could be made without materially departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

The combination of a safe with a bolt secured in the lid thereof, a magnet and arma-

ture adapted to lock the bolt when in position, a series of contacts and conductors, a portion of which contacts only are in circuit with the magnet, a second magnet whose armature is opposed to that of the first and which is connected with a portion of such contacts, and a third magnet whose armature is connected with the bolt and adapted to retract the same, which magnet is connected with a portion of such contacts.

EDWARD J. COLBY.

Witnesses:

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