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C. H. POND.

Lock for Circuit-Closer.

No. 213,064. Patented Mar. 11, 1879.

Fig. 1.

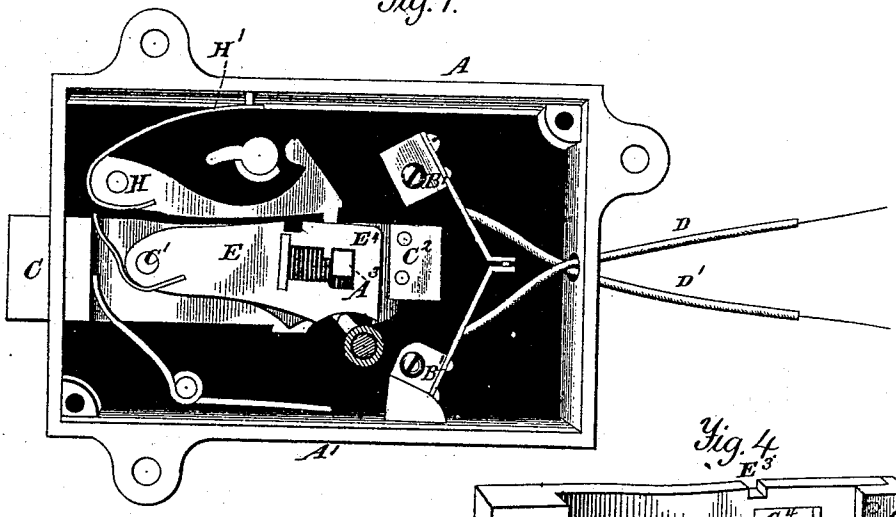


Fig. 4.

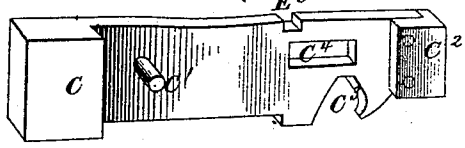


Fig. 2.

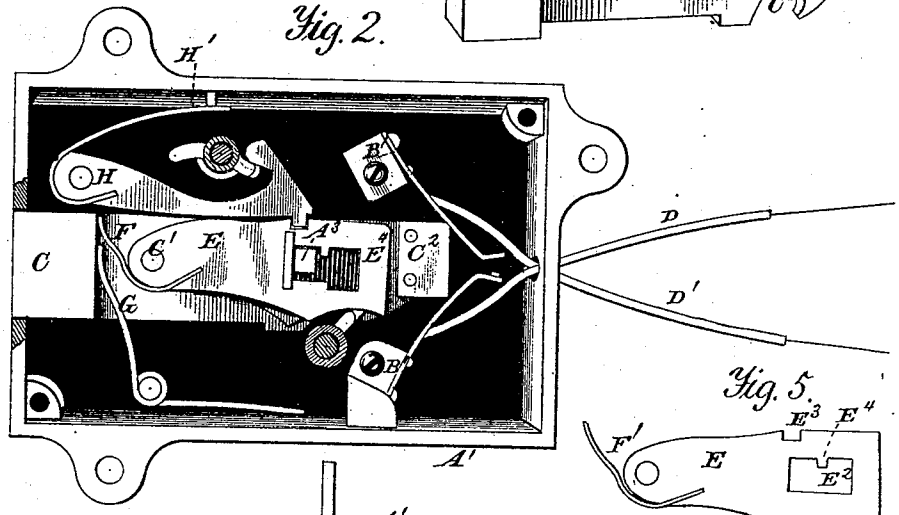
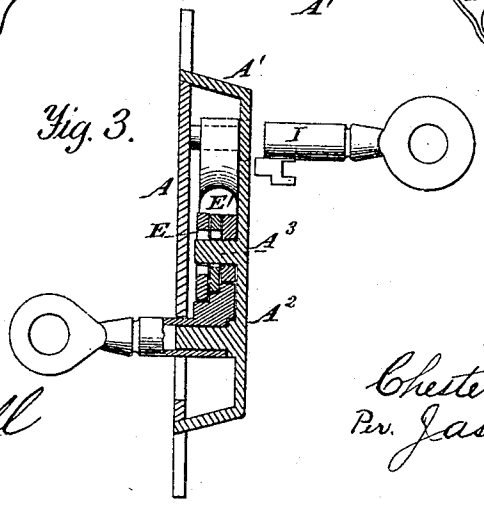


Fig. 5.

Fig. 3.



Witnesses.
A. Ruppert.
C. M. Connell

Inventor:
Chester H. Pond
Per. Jas. M. Blanchard
Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

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UNITED STATES PATENT OFFICE.

CHESTER H. POND, OF NEW YORK, N. Y.

IMPROVEMENT IN LOCKS FOR CIRCUIT-CLOSERS.

Specification forming part of Letters Patent No. **213,064**, dated March 11, 1879; application filed February 12, 1879.

To all whom it may concern:

Be it known that I, CHESTER H. POND, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Locks; 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 letters of reference marked thereon, which form a part of this specification—

Figure 1 being a plan view of my improved lock with the inside plate removed and showing the wires for the conduction of the electric current, the arrangement of the springs which are employed for closing and breaking the current, the sliding bolt with the non-conducting material on its end, the tumblers which are pivoted thereto, the springs for holding them in position, the dog which holds the bolt in its unlocked position, and the position of the keys used with the lock, the parts in the figure being shown in the positions they assume when the door or other device upon which they are placed is locked. Fig. 2 is also a plan view showing the parts above alluded to in the positions which they assume when unlocked. Fig. 3 is a transverse section showing the position of the keys with reference to the lock. Fig. 4 is a perspective view of the sliding or locking bolt and the form which is given thereto; and Fig. 5 is an elevation of one of the tumblers and a portion of its spring.

Similar letters denote like parts in all of the figures.

This invention relates to locks for various purposes where it is desirable to have a current of electricity pass through them at times, and where it is necessary to break or discontinue said current at other times; and it consists in constructing such a lock in such a manner that when the locking-bolt is thrown outward, or into a position to lock the door or other device to which it may be applied, the current of electricity will flow through it unbroken, but so that when the locking-bolt is thrown inward, or into a position to unlock the door, the current will be broken and remain thus until the locking-bolt is again thrown into a position to lock.

The invention further consists in certain combinations and arrangements of some of the parts of which the lock is composed, which features render it applicable to various purposes, such as securing the doors of safes, money-drawers, fire-alarm signal-boxes, and, in short, to any device in which it is desirable to have a current of electricity pass, and where it is desirable to shorten the circuit, economize the force required to keep up the longer circuit, or give notice that the lock has been tampered with.

In constructing this type of locks I use any suitable sized plate A, of the usual or any required material, it having upon one of its surfaces flanges A^1, which serve to inclose the operating parts of the lock. To the edges of these flanges or to some projections from the plate A another plate, A^2, is secured, the last-named plate completing the inclosure of the mechanism operated by the keys, and also of the circuit-breaker.

To the plate A or to the flanges A^1 there are secured, by screws or otherwise, blocks of any material which is a non-conductor of electricity, and to these metal springs B′ B′ are secured in such a manner that their outer or free ends shall come in contact, or nearly so, when they are in their normal position, or when not separated by the sliding bolt hereinafter to be described. These springs sustain such a relation to the sliding or locking bolt that when said bolt is in its locked position, as shown in Fig. 1 of the drawings, their outer ends will be allowed to come in contact and thus permit the current of electricity to flow through the structure, it being brought thereto and taken therefrom by means of conducting-wires D and D′, but so that when the locking-bolt is thrown back into its unlocking position, as shown in Fig. 2, it shall separate their outer or free ends to such an extent as to make a break in the current, and thus for the time being prevent any flow of electricity through the structure.

The wires above alluded to may be connected to any line leading from a battery used for other purposes, or they may be connected with a local battery expressly for operating the lock.

The sliding or locking bolt C, above alluded

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to, is shown in Figs. 1, 2, and 4, and consists of a bar of metal, the outer end of which is of sufficient thickness and width to give it the required strength, that portion thereof which is within the plates of the lock being reduced in thickness, as shown in Fig. 4, in order that the tumblers which serve to retain it in position may be pivoted thereto, for which purpose a pin, C^1, is inserted into it, as shown. The end of this bolt, which is opposite to the one described, is provided with a block, C^2, of non-conducting material, so that when it is thrown back and comes in contact with the springs the current shall not be diffused through the material of which the lock is made. At a suitable point between the two ends of bolt C there is formed in its under surface a peculiarly-formed recess, C^3, as shown in Fig. 4, the object being to provide a space into which a nib formed on the key shall enter, and thus, as the key is turned, force the bolt outward or inward, as occasion may require. This bolt is also provided with a slot, C^4, the length of which is sufficient to permit the bolt to move the required distance. It also has formed in its upper edge a recess, C^5, into which a dog falls, to hold it in its unlocked position.

The tumblers referred to are lettered E and E^1, and consist of plates of metal, which are pivoted to the locking-bolt C, and move horizontally with it. Near their free ends these tumblers are provided with a slot, E^2, which corresponds with C^4 in bolt C, except that from its upper surface there is projecting downward a pin or portion of the plate lettered E^4, the purpose of which is to engage with a stud, A^3, which is fast upon the inner surface of plate A of the lock, and thus prevent the retraction of the bolt C without the use of the key. These tumblers are forced downward at their free ends, so as to cause them to engage with the stud A^3, by means of springs F F, which are attached to them, and bear against the projection on bolt C, as shown.

For aiding in the outward or locking movement of bolt C, a spring, G, is attached to the plate A, one end of which bears against the projection of said bolt, which causes it to be pressed upon as said bolt is retracted, and consequently to aid in throwing the bolt outward.

To provide for holding the bolt in its unlocked position, and to prevent it from being moved from that position by the key which unlocks it until such time as a second key is brought into requisition, there is placed by the side of the locking-bolt a trap-tumbler, H, which is pivoted to the lock-plate in such a manner that its free end may be raised by a key, it being forced downward by means of a spring, H'. Upon the under surface of this tumbler there is formed a projection, which, when the locking-bolt C and the tumblers E and E^1 are thrown backward, or into the position in which they are placed when the door is unlocked, falls into a notch, E^3, formed in their upper edges, and thus holds the bolt in its unlocked position, and renders it impossible to force the bolt C forward until the key I is inserted and the trap-tumbler lifted out of the notch E^3.

It will be seen that this arrangement of parts renders it impossible for any one person to unlock and again lock any door or device to which this lock is attached, unless in possession of both the keys.

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

1. In combination with a lock for various purposes, electrical connections, substantially as described, and a locking-bolt having upon one of its ends a non-conducting substance, it being arranged with reference to the electrical circuit, substantially as described, whereby it is made to break said circuit when thrown back or into its unlocked position, for the purpose set forth.

2. The trap-tumbler H, when constructed and arranged substantially as and for the purpose set forth.

3. The combination of the locking-bolt C, tumblers E E^1, trap-tumbler H, and stud A^3, the parts being arranged to operate substantially as and for the purpose set forth.

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

CHESTER H. POND.

Witnesses:
A. TENNEY,
A. B. HINMAN.