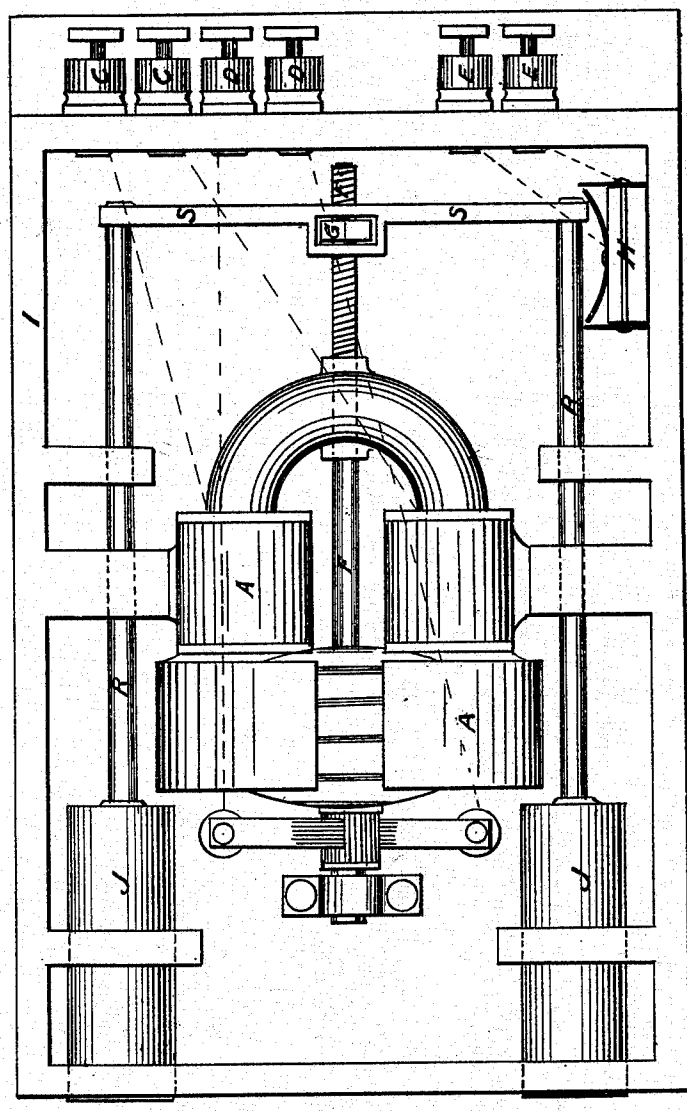
(No Model.)

J. ELDON.

ELECTRIC LOCK.

No. 518,667. Patented Apr. 24, 1894.



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ELECTRIC LOCK.

SPECIFICATION forming part of Letters Patent No. 518,667, dated April 24, 1894.

Application filed October 31, 1892. Serial No. 450,592. (No model.)

To all whom it may concern:

Be it known that I, JAMES ELDON, a citizen of the United States, residing at the city of Lock Haven, in the county of Clinton and State of Pennsylvania, have invented a new and useful Electric Lock, which is fully set forth and described in the following specification, reference being had to the accompanying drawing.

The main objects of my invention are to prevent the opening of safes on rail-road trains between stations, also that a number of safes in a city or town belonging to several companies, firms or individuals may be electrically locked and electrically opened, by a combination of electric terminals, from a common or central station, or storage battery, connected if desired with an alarm at each or any of the said safes, also by the use of this lock placed on the inside of safe doors, the usual weakening of the doors is prevented, by avoiding the apertures necessary for keyways and combination shafts used for other locks, as well as avoiding cutting away the solid material of doors for the insertion of locks.

My invention is also applicable and intended to be used on prison, hospital and other doors, where the safety and convenience it insures may be desired. To accomplish these objects, the nature of my invention requires an electric motor, under the control of an operated electric current, to move the bolt or bolts of a lock forward and backward, the lock being firmly fastened to the inside of the door to be locked.

My invention, its movements and control will be better understood, by reference to the drawing attached.

The following is a description of my lock.

The accompanying drawing is a view of the entire lock, the covering or back part being removed, to expose the mechanism to full view.

The frame I I incloses the parts.

J J represent the bolts of the lock.

R R are rearward extensions of the bolts J J, rigidly connected by the cross-piece S S, with an opening in the latter to receive the angular nut G. The opening is so constructed that the nut may move easily forward and backward in it, but is of such shape and size as to prevent the nut G from turning therein.

A A is an electric motor with shaft F F, having a screw thread cut on the rear end thereof. The shaft passes through apertures of somewhat greater diameter, than the screw end of the shaft, one in the forward side of the frame making said opening and the other in the rear side of the frame. The nut G is so operated on said screw, in said opening in the cross piece S S, as to allow the armature to make several revolutions, without expending any force to move said bolts forward or backward, in order to secure momentum, to aid the motor and screw, in moving the bolts J J, into or out of the places prepared to receive them, outside the lock.

The electric current is supplied to the motor by means of wires (not shown) attached to the binding posts C C D D. The wires leading from binding posts C C into the lock, connect with the field magnets A A. The wires leading from D D into the lock, connect with brushes of the motor.

The operation and use of my lock are as follows:—Starting with the bolts entirely within the lock, the nut G will be adjusted on the rear part of the shaft of the armature, so as to be in contact with the rear side of the opening in the cross-piece S S. To move the bolts forward so as to lock, the electric current is so applied through the binding posts C C and D D to the motor A A, as to cause the armature to revolve in the right direction, so that the nut G is moved freely forward on the screw threaded shaft F F in said opening, until the nut comes in contact with the forward side of the opening in cross-piece S S, when by the continued revolution of the shaft, by the power of the electric current and of the screw of the shaft, the frame R R S S, with the bolts J J attached are forced forward, the bolts pass into the apertures prepared for them outside the door to which the lock is fastened, and thus the door is locked as desired. To withdraw the bolts, or to unlock, the electric current is reversed, by means of a switch (not shown), causing the armature to revolve in the opposite direction, whereby the nut G is moved freely backward until it comes in contact with the rearward side of the frame, forming the opening for it, in the cross-piece S S, when all the parts operate the same as in locking, except that they act in the reverse direction, the bolts are thereby withdrawn en-

tirely into the lock, and the fastening of the door is undone or it is unlocked. When the bolts J J arrive at their destination, either forward or backward, a part of the frame R R S S, comes in contact with a metal spring H, by which means the circuit, from an electric battery is closed on an electric alarm or bell (not herein shown or described), whereby the operator is given notice that the bolts J J are in the position he may desire to lock or unlock the door.

I claim as my invention and for which I desire to secure Letters Patent—

1. In an electric lock the combination with an electric motor, having a shaft provided with a screw thread on the rear end thereof, the bolts J J, having rear extensions R R, connected by the cross-piece S S, of an angular nut G working on the screw threaded end of shaft F F and located within an opening in the cross-piece, whereby rotation of the shaft will operate the bolts, substantially as described.

2. The combination in an electric lock of an electric motor, having a shaft provided with a screw thread on the rear end thereof, the bolts J J, having rear extensions R R, connected by a cross-piece S S with an angular nut G, working on the screw threaded end of shaft F F, and located within an opening in the cross-piece S S, whereby the rotation of the shaft in one direction will move the bolts forward to lock, and in the reverse direction backward to unlock together with the metal spring H, so arranged that when the bolts arrive at their destination, either in locking or unlocking, the frame R R S S will strike the spring H and thereby close an electric current (outside the lock) upon an alarm or bell, substantially as described and for the purposes set forth.

JAMES ELDON.

Witnesses:
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