

No. 816,792.

PATENTED APR. 3, 1906.

O. H. P. GREEN & D. CARPENTER.

LOCK.

APPLICATION FILED SEPT. 6, 1904.

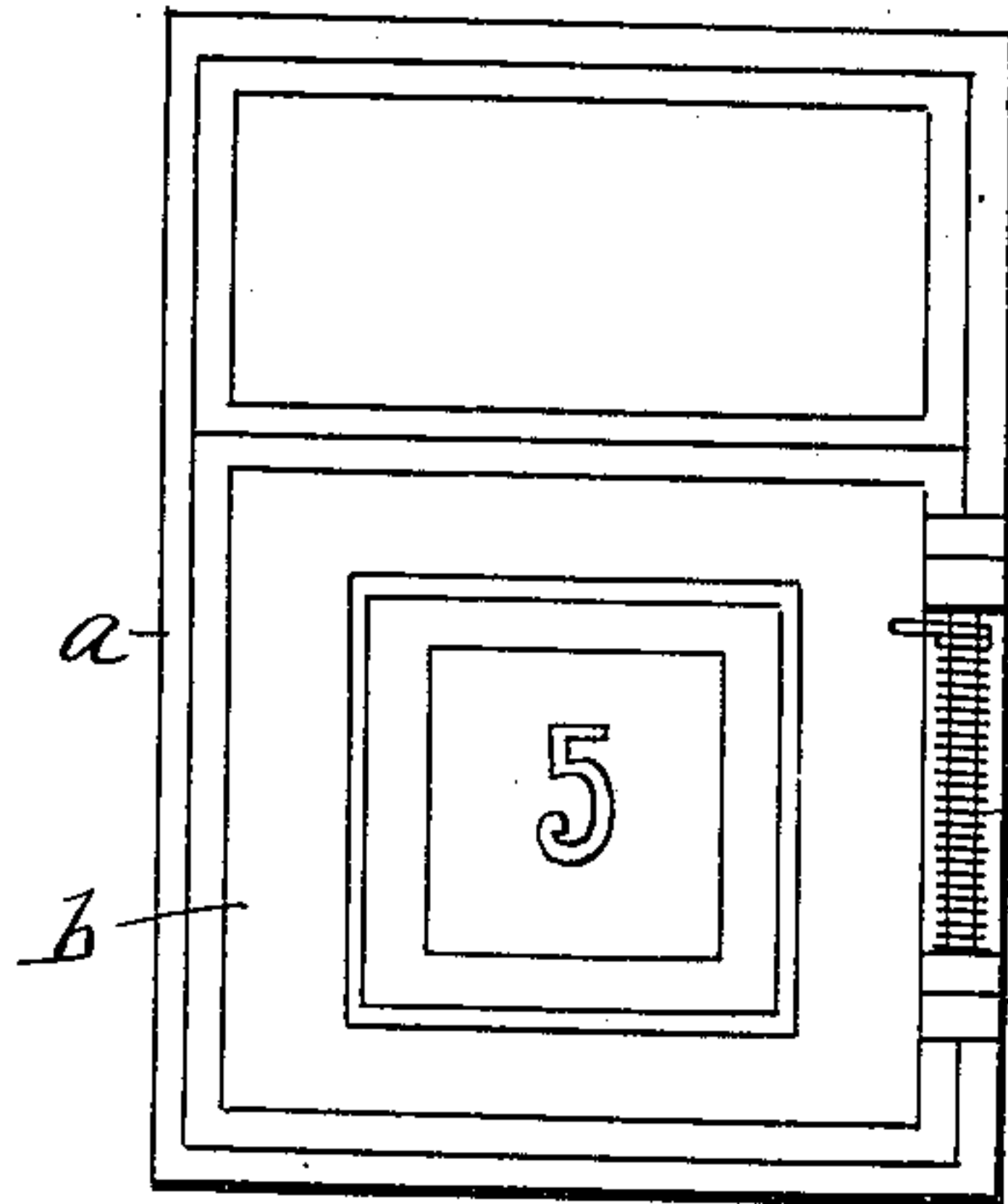


Fig. 1.

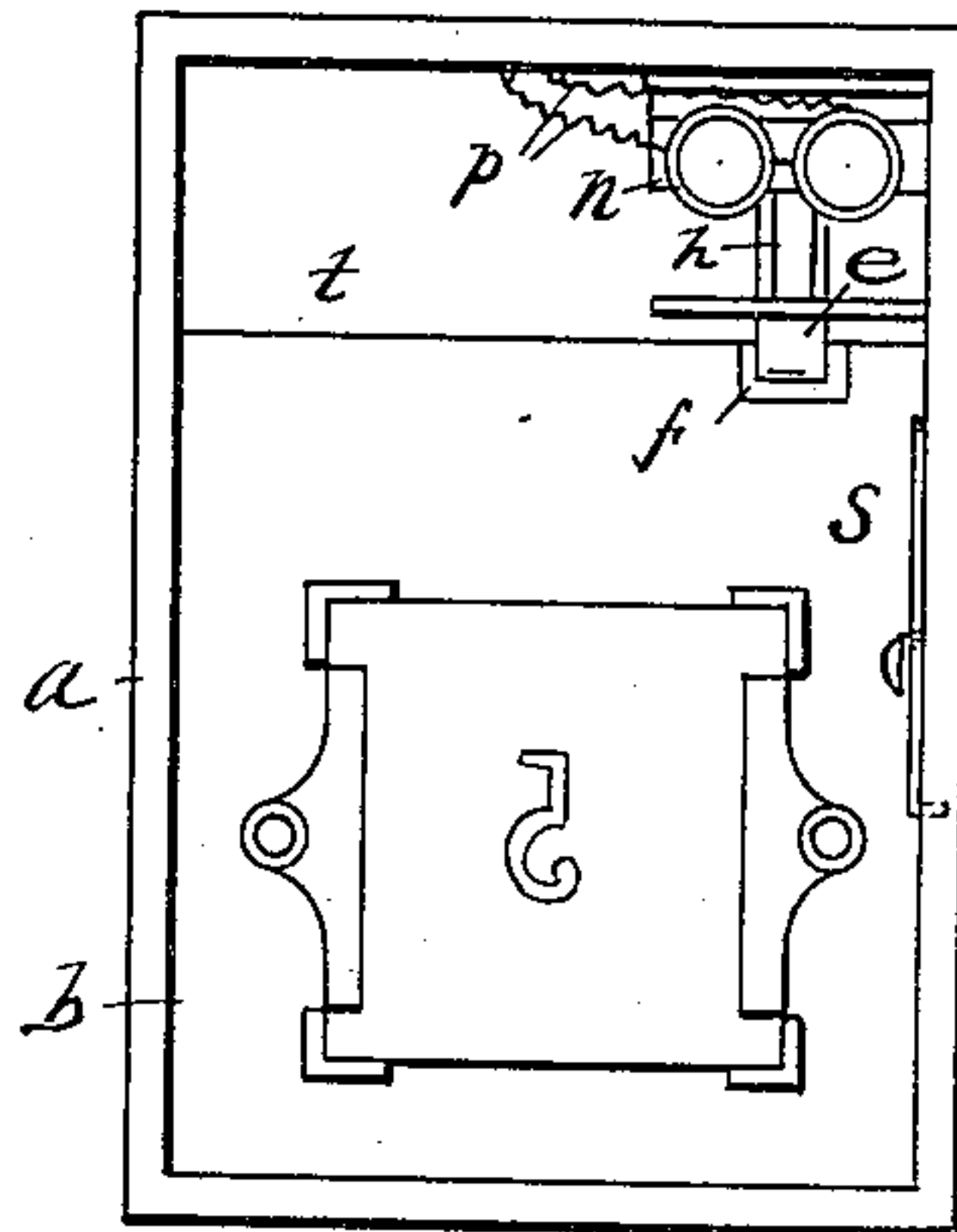


Fig. 2.

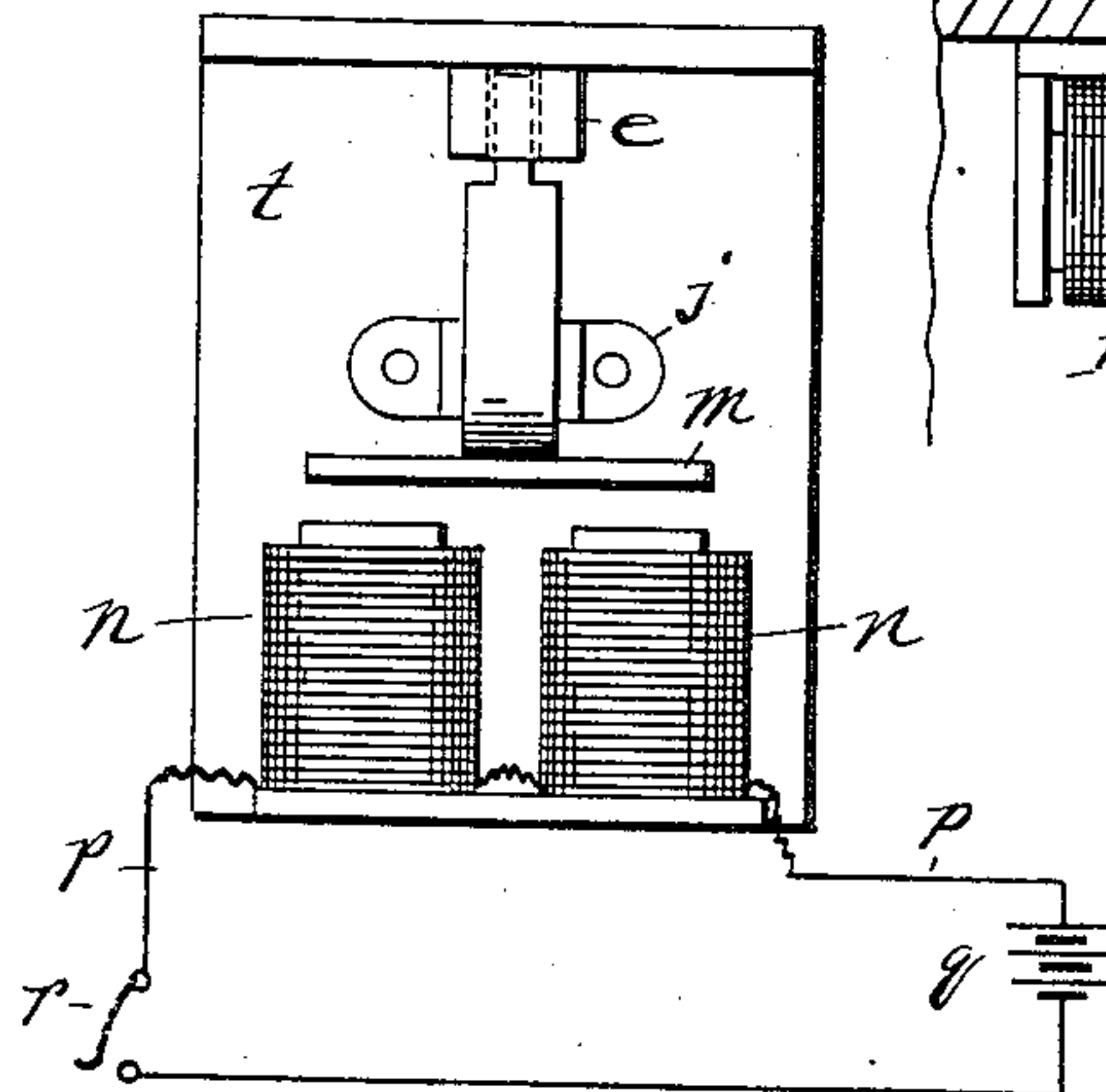


Fig. 3.

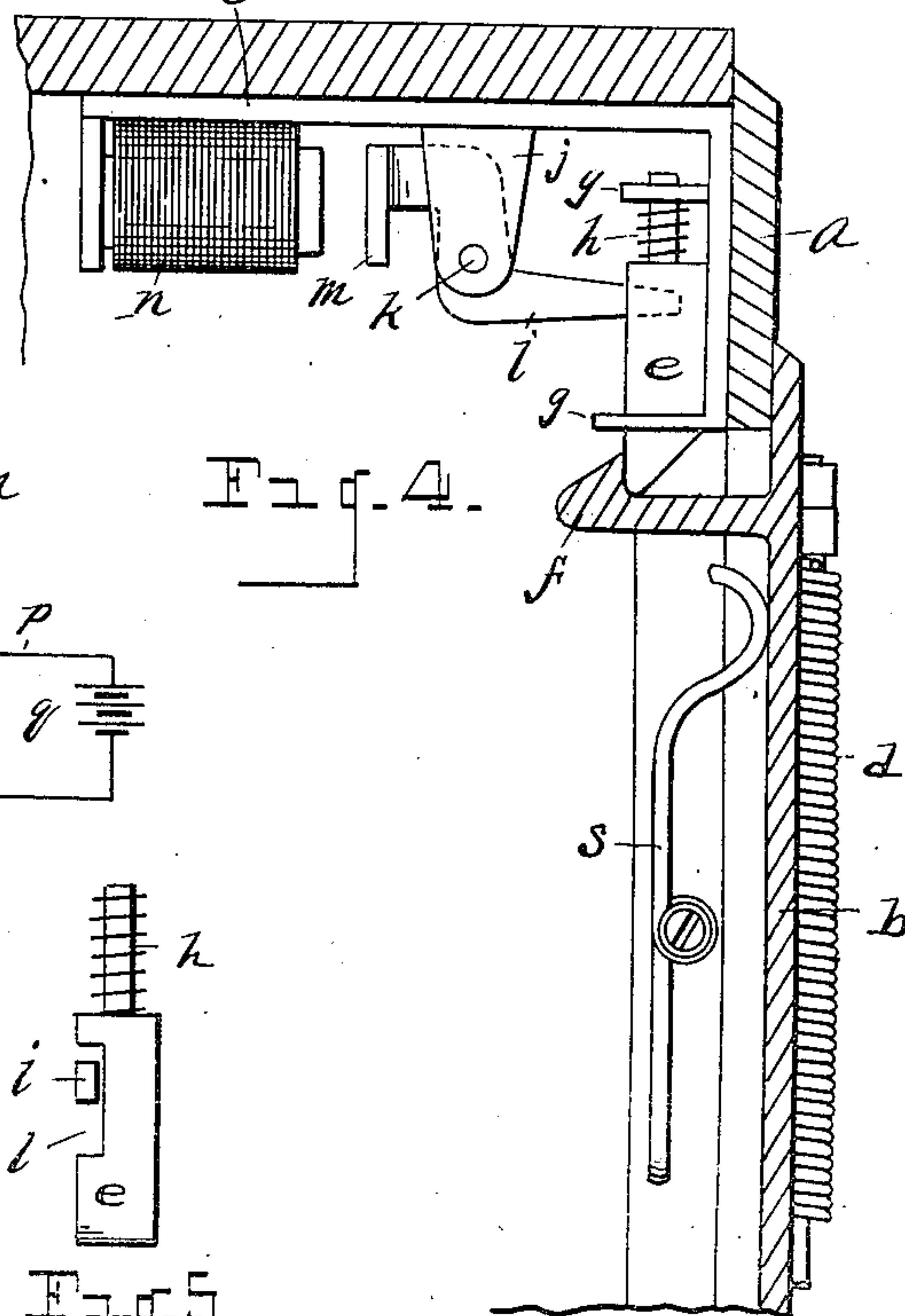


Fig. 4.

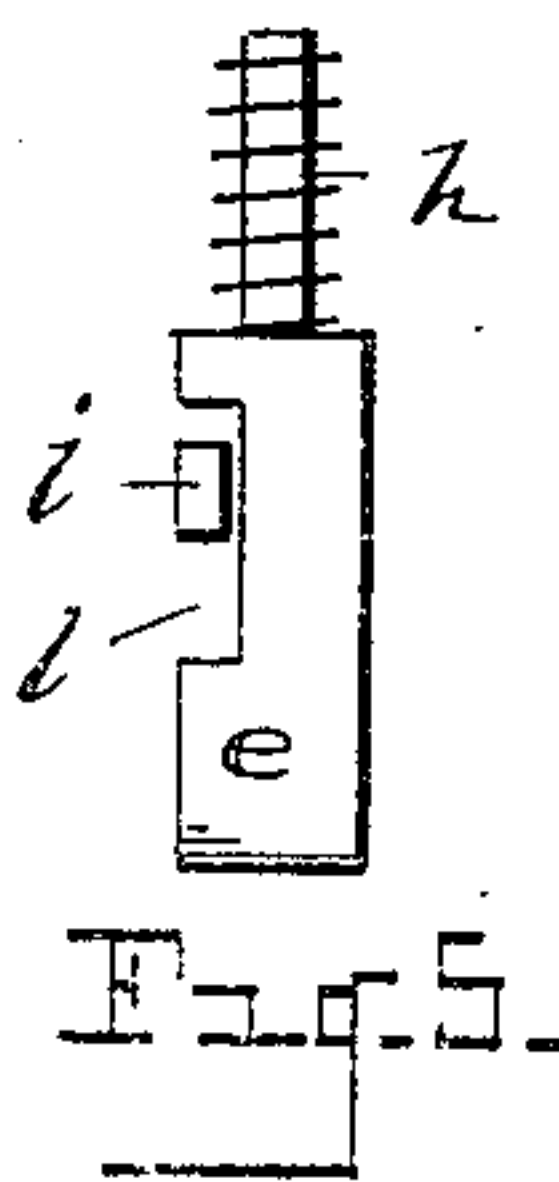


Fig. 5.

Witnesses:  
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O. H. P. Green  
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By their Attorney

Inventors

Newell S. Wright.



# UNITED STATES PATENT OFFICE.

OLIVER H. P. GREEN AND DELOS CARPENTER, OF ORION, MICHIGAN.

## LOCK.

No. 816,792.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed September 6, 1904. Serial No. 223,357.

*To all whom it may concern:*

Be it known that we, OLIVER H. P. GREEN and DELOS CARPENTER, citizens of the United States, residing at Orion, county of Oakland, State of Michigan, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to certain new and useful improvements in locking mechanism, the same being especially adapted and designed to be applied to post-office boxes to govern the opening and closing of the doors of the boxes whereby the postal official may always have the locking mechanism under his control, as by means of an electric button upon a switchboard placed in any location that may be most convenient for his operation.

While we do not limit our invention to its application to post-office boxes alone, inasmuch as we contemplate the application of our invention to any use for which it may be found suitable, we have shown the locking mechanism in the accompanying drawings as applied to the door of a post-office box. It is obvious, however, that any door, as the door of a room or house, might be similarly controlled, if desired. The invention might be applied to doors in apartment-houses, for example.

Our invention consists of the construction, combination, and arrangement of devices hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in elevation of the front of a post-office box. Fig. 2 is a view in elevation looking in the opposite direction and showing the inner face of the door with features of the locking mechanism within the box. Fig. 3 is an inverted plan view of portions of the mechanism with parts of the case or supporting-frame removed. Fig. 4 is a view in side elevation, showing parts in vertical section. Fig. 5 is a detail view of the locking-bolt in elevation at right angles to the position of the bolt shown in Fig. 4.

As applied to post-office boxes our invention is designed more particularly to have the boxes to which our improved locking mechanism is applied under the control of the postal official, so that when a party comes for his mail the postal official by simply touching a push-button may cause the door of the box to be opened, so that the party may take

his mail, the door automatically closing when the mail is removed. The desirability and utility of such a mechanism will be readily understood, enabling the party at any time to readily secure his mail without being obliged to carry a key and without requiring any unnecessary steps on the part of the postal officials.

It is well understood that combination-locks, for example, are commonly employed upon post-office boxes; but with boxes equipped with our improved mechanism the party would have no need to stop to work a combination-lock, while his mail would be at all times under the safeguard of the postal official.

Our invention contemplates such a construction and arrangement of the mechanism that the postal official may open any given box equipped with the mechanism without having to leave his place. It will readily be understood that where post-office boxes are equipped with such a mechanism the delivery of the mail is greatly facilitated. Where a post-office is equipped with our improved mechanism, the office may be saved, oftentimes, considerable expense in extra help that would otherwise be required.

In carrying out our invention, *a* represents a post-office box, and *b* the door thereof, which may be operated as desired. This door is hinged at one side thereof, as indicated at *c*, a spring-hinge being preferably employed, the spring *d* serving to close the door after a party has removed the mail from the box. The door is held in locked position by means of a bolt *e*, held in reciprocatory engagement in the upper part of the box, for example, in any suitable manner, the end of the bolt engaging a latch *f*, attached to the door. The bolt, however, may engage the door to hold it in locked position in any suitable manner. The bolt is shown held in position by guide-brackets, (indicated at *g g*,) the stem of the bolt being provided with a spring *h*, the tension of which tends to hold the bolt in locked position. To withdraw the bolt *e* from locked position, we employ a bell-crank lever *i*, which may be fulcrumed in any suitable manner, as to a bracket *j*, as indicated at *k*. We do not limit ourselves to any particular shape of the bell-crank, as any lever may be employed within the scope of our invention adapted to accomplish the work designed. One end of the lever is engaged with the bolt in any suitable manner. For exam-



ple, the bolt may be constructed with a lateral elongated recess (indicated at *l*) to receive the end of the lever *i*. One end of the lever *i* is constructed in the nature of an armature *m*. Adjacent to said armature is located an electromagnet, (indicated at *n*,) the wires *p* of which may lead to any suitable switchboard.

In Fig. 3 we have shown in diagram an electric circuit leading to the said magnet, said circuit provided with a battery *q* and a switch *r*. The switch *r* may obviously be in the nature of a push-button or otherwise, as may be desired.

Within the box is a spring *s*, normally bearing against the inner face of the door, so that when the bolt *e* is withdrawn from locked position the spring *s* will throw the door slightly ajar or out of closed position. The spring *d*, already described, is preferably arranged so as not to exert its tension upon the closed door, the contacting end of the spring *d* being arranged at a slight distance from the outer face of the door. The spring *s* when free to exert its tension will throw the door sufficiently ajar to bring it into contact with the spring *d*. The party seeking his mail may then readily grasp the door and open it wide to remove his mail, thereby obviously increasing the tension of the spring *d*, so that when he releases the door the tension of the spring *d* will throw the door into closed and locked position. The spring *s*, it will be understood, is weaker than the spring *d* and need be only of sufficient strength to throw the door ajar, so that the party seeking his mail may readily open the door more widely, the door being thrown by the spring *s* out of position for the bolt *e* to reengage the door until it is thrown back fully into normally closed position. The spring *d* being of greater strength in its operation in closing the door will readily overcome the lesser tension of the spring *s*.

We have shown but a single box equipped with our improved locking mechanism; but it will readily be understood that our invention contemplates equipping any desired number of post-office boxes therewith, each having its independent electrical connection with the switchboard. The switches upon the switchboard may be operated to correspond with the respective boxes, so that the operator when a given box is called can readily open the box simply by manipulating the corresponding button or switch upon the board. In this manner there is no locking mechanism accessible from the exterior or outer face of the boxes.

The locking mechanism is preferably supported upon a case, (indicated at *t*,) which may be secured on the inside of the box, preferably above the door.

What we claim as our invention is—

1. A locking mechanism comprising a casing, a door provided with a latch on its inner face, a locking-bolt within the casing to engage said latch, a bell-crank lever engaged at one end with said bolt to actuate the bolt, the opposite end of the bell-crank constituting an armature, and an electromagnet adjacent to the armature end of the lever to actuate the lever.

2. A locking mechanism comprising a casing, a door, a movable bolt to lock the door, a bell-crank lever engaged at one end with said bolt to actuate the bolt, the opposite end of the bell-crank lever constituting an armature, an electromagnet to attract the armature end of the bell-crank lever, an electrical circuit leading to said magnet, and means to open and close said circuit.

3. A locking mechanism, comprising a casing, a door, a locking-bolt supported in the casing to lock the door, a bell-crank lever engaged at one end with said bolt to actuate the bolt, and constructed to form an armature at the opposite end thereof, an electrical circuit, an electromagnet in said circuit to actuate said armature, and a switch to open and close said circuit.

4. A locking mechanism comprising a casing, a door provided with a latch, a locking-bolt on the inside of the casing to engage the latch and lock the door in closed position, a lever engaged at one end with said bolt to actuate said bolt, the opposite end of the lever constituting an armature, and electrical mechanism accessible from the inner side of the door for actuating said lever.

5. A locking mechanism, comprising in combination a casing, a door, a locking-bolt located on the inside of the casing to engage the door and lock the door in closed position, a lever engaged at one end with said bolt to actuate the bolt, a switch accessible from the inner side of the door, and electrical mechanism controlled by said switch to actuate said lever.

6. A locking mechanism comprising in combination a casing, a spring-actuated door, a locking-bolt located on the inside of the casing to control the operation of the door, a lever engaged at one end with said bolt to actuate the bolt, and constituting an armature at its opposite end, and electrical mechanism to actuate said lever.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

OLIVER H. P. GREEN.  
DELOS CARPENTER.

Witnesses:

AGNES KNOWLES,  
EDWIN W. TOWNE.