

No. 848,633.

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C. A. CHUBB,  
PADLOCK.

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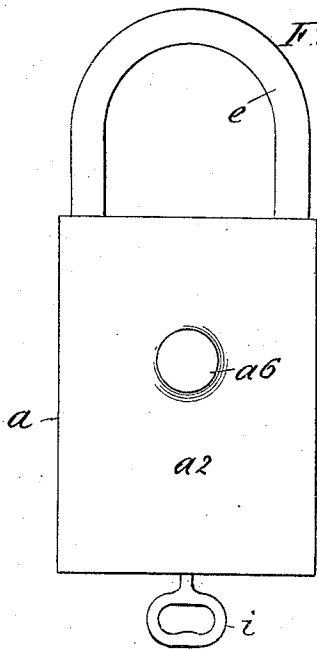


Fig. 1.

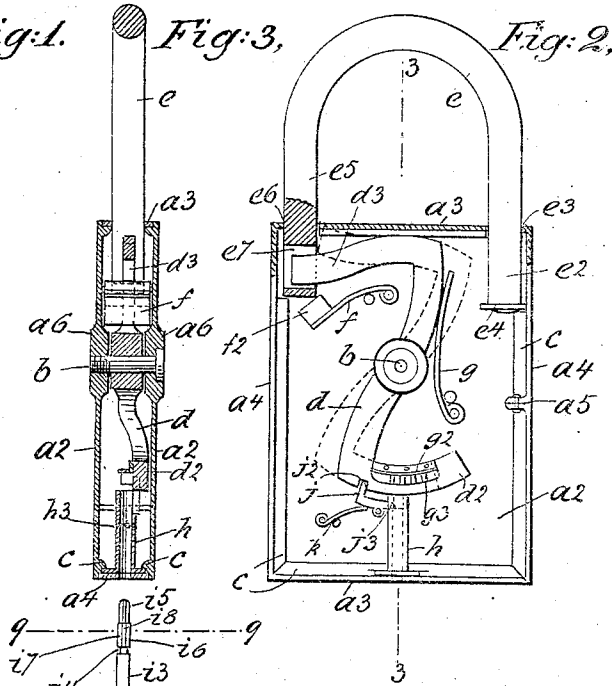


Fig. 3.

Fig. 2.

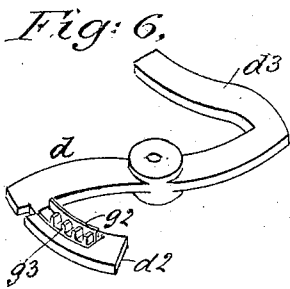


Fig. 6.

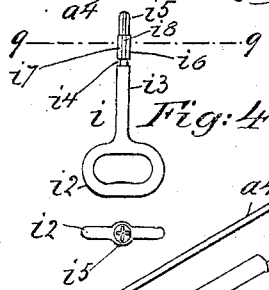


Fig. 4.

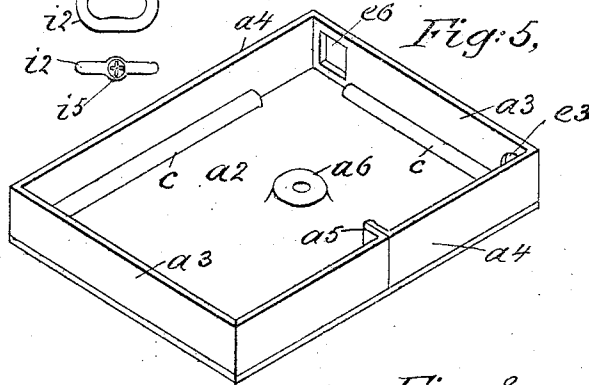


Fig. 5.

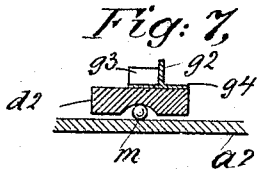


Fig. 7.

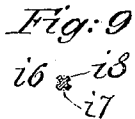


Fig. 9.

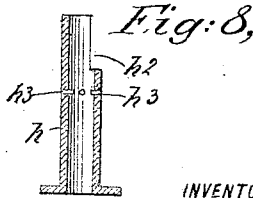


Fig. 8.

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# UNITED STATES PATENT OFFICE.

CHESTER ARTHUR CHUBB, OF WILMINGTON, NORTH CAROLINA.

## PADLOCK.

No. 848,633.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed June 9, 1906. Serial No. 320,945.

To all whom it may concern:

Be it known that I, CHESTER ARTHUR CHUBB, a citizen of the United States, and residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Padlocks, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to padlocks; and the object thereof is to provide an improved lock of this class which is simple in construction and operation and which is provided with an improved key and lock mechanism whereby the lock cannot be picked and can only be operated by means of a particularly-constructed key; and with this and other objects in view the invention consists in a lock of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of my improved padlock; Fig. 2, a similar view with one side of the case of the lock removed and with part of the construction in section; Fig. 3, a section on the line 3 3 of Fig. 2; Fig. 4, a side and end view of a key which I employ; Fig. 5, a perspective view of the case with one side thereof removed; Fig. 6, a perspective view of a part of the lock mechanism; Fig. 7, a sectional view of a part of the lock mechanism and of the case; Fig. 8, a longitudinal sectional view of a key-tube which I employ, and Fig. 9 a section on the line 9 9 of Fig. 4.

In the practice of my invention I provide a case *a*, which in the construction shown is flat and rectangular in form and which comprises front and back plates *a*<sup>2</sup> and end and side members *a*<sup>3</sup> and *a*<sup>4</sup>, said end and side members being preferably composed of a single strip of metal bent into form, as shown in Figs. 2 and 5, and the ends of which are connected, as shown at *a*<sup>5</sup>; but my invention is not limited to the particular construction of the case *a* herein shown and described nor to the form thereof.

The front and back plates *a*<sup>2</sup> of the case *a* are preferably thickened centrally thereof to form bearings *a*<sup>6</sup>, through which is passed

a screw *b*, by which the parts of the case are secured together, and the said front and back plates *a*<sup>2</sup> are preferably provided with inwardly-directed beads or strips *c*, against which the end and side members *a*<sup>3</sup> and *a*<sup>4</sup> abut.

Mounted on the screw *b* is a lock-lever *d*, one end of which is provided with a key-arm *d*<sup>2</sup> and the other with a lock-arm *d*<sup>3</sup>, and mounted in one end of the case *a* is a shackle *e*, the opposite sides of which pass through said end of the case, and the side arm *e*<sup>2</sup> of the shackle *e* is round and passes through a corresponding round opening *e*<sup>3</sup> in said end of the case and is provided with a head *e*<sup>4</sup>, while the other side arm *e*<sup>5</sup> of the yoke is angular in cross-section and passes through a corresponding angular opening *e*<sup>6</sup> in said end of the case and is also provided with a transverse aperture *e*<sup>7</sup>, through which the arm *d*<sup>3</sup> of the lock-lever *d* is adapted to pass.

Secured in the case *a* and to one side thereof is a spring *f*, having a head *f*<sup>2</sup>, which normally bears on the inner end of the side arm *e*<sup>5</sup> of the shackle *e*, and another spring *g* is also secured in the case *a* and normally bears on that end of the lock-lever *d* with which the arm *d*<sup>3</sup> is connected, and the object of which is to hold the arm *d*<sup>3</sup> in operative position, as shown in full lines in Fig. 2, in which position said arm passes through the aperture *e*<sup>7</sup> in the side arm *e*<sup>5</sup> of the shackle *e*.

The outer edge of the arm *d*<sup>3</sup> of the lock-lever *d* is segmental in form, and said arm is provided with a curved flange *g*<sup>2</sup>, adjacent to which are rack-teeth *g*<sup>3</sup>, said flange *g*<sup>2</sup> and rack-teeth *g*<sup>3</sup> being formed in connection with a plate *g*<sup>4</sup>, which is secured to the arm *d*<sup>2</sup> of the lock-lever *d*, and mounted in the case *a* between the arm *d*<sup>2</sup> of the lock-lever *d* and the adjacent end of said case is a key-tube *h*,

through which a key *i* may be inserted. One side of the inner end of the key-tube *h* is cut out longitudinally, as shown at *h*<sup>2</sup>, to form a longitudinal recess, and said tube is also provided inwardly of said recess with inwardly-directed ward-pins *h*<sup>3</sup>, four of which are preferably employed.

The key *i* comprises a handle member *i*<sup>2</sup> and a shank *i*<sup>3</sup>, and said shank is provided at a predetermined distance from the end thereof with an annular groove *i*<sup>4</sup> and at the end thereof with longitudinally-arranged teeth *i*<sup>5</sup>, which operate in connection with the rack-teeth *g*<sup>3</sup> on the arm *d*<sup>2</sup> of the lock-lever *d*, and that part *i*<sup>6</sup> of the shank of the

key between the longitudinally-arranged teeth  $i^5$  and the annular groove  $i^4$  is provided with longitudinal grooves  $i^7$ , which correspond with the spaces between the teeth  $i^5$  and which form longitudinal ribs  $i^8$ .

Within the case  $a$  and pivoted to one side thereof adjacent to the key-tube  $h$  is a dog  $j$ , provided at one end with a nose  $j^2$ , adapted to enter a recess in the arm  $d^2$  of the lock-lever  $d$ , and the other end of the dog  $j$  is provided with a nose  $j^3$ , which passes into the recess  $h^2$  in the inner end of the key-tube  $h$ , and a spring  $k$  normally serves to hold the dog  $j$  in the position shown in Fig. 2, in which position all the parts of the lock are in operation.

When it is desired to throw the parts of the lock out of operative position, so that the shackle  $e$  may be moved outwardly and the side arm  $e^5$  thereof withdrawn from the case  $a$ , the shank  $i^3$  of the key is inserted into the tube  $h$ . In this operation the end of the shank of the key strikes the nose of the dog  $j$ , which is normally in the recess  $h^2$  in the tube  $h$ , and forces the nose  $j^2$  of said dog out of connection with the arm  $d^2$ . When the shank of the key is fully inserted, the teeth  $i^5$  at the end of the key will engage the rack-teeth  $g^3$  on the arm  $d^2$  of the lock-lever, and then by turning the key the lock-lever may be thrown into the position shown in dotted lines in Fig. 2, and the spring  $f$  will move the shackle  $e$  outwardly, and said shackle may be turned on the side arm  $e^2$  thereof in the usual manner. When it is desired to operate the lock, the key  $i$  must be manipulated, as above described, and the lock-lever  $d$  thrown into the position shown in dotted lines in Fig. 2, after which the side arm  $e^5$  of the shackle  $e$  is forced inwardly through the aperture  $e^7$ , at which time the spring  $g$  forces the lock-lever into the operative position, as shown in full lines in Fig. 2.

The ward-pins  $h^3$  in the tube  $h$  when the key  $i$  is in operative position fit in the groove  $i^4$ , and said key may be freely turned in either direction, and in the operation of inserting the key into the tube  $h$  said pins pass through the grooves  $i^7$  in the part  $i^6$  of the shank of the key and between the ribs  $i^8$ , and by means of this construction it will be seen that the lock cannot be operated except by a key of the specific construction shown and described.

In Fig. 7 I have shown a ball-bearing  $m$  placed between the arm  $d^2$  of the lock-lever  $d$  and the adjacent back of the case  $a$ , which arm normally bears on said back of the case; but said bearing is not an essential element of this invention and may or may not be employed.

My invention is not limited to the form of the case  $a$ , and said case may be circular in form, if desired, and may also be of any desired construction.

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

1. A lock of the class described, comprising a case, a shackle the side arms of which are movable through one face of said case, one of said arms being provided with a transverse aperture, a lock-lever pivoted in said case and provided at one end with a locking-arm adapted to be projected through said aperture and at the opposite end with a key-arm having rack-teeth, a spring operating in connection with said lever for holding the locking-arm in operative position, a key-tube secured in the case adjacent to the key-arm and through which a key is adapted to be inserted, and a key provided with teeth adapted to operate in connection with the rack-teeth on the key-arm.

2. A lock of the class described, comprising a case, a shackle the side arms of which are movable through one face of said case, one of said arms being provided with a transverse aperture, a lock-lever pivoted in said case and provided at one end with a locking-arm adapted to be projected through said aperture and at the opposite end with a key-arm having rack-teeth, a spring operating in connection with said lever for holding the locking-arm in operative position, a key-tube secured in the case adjacent to the key-arm and through which a key is adapted to be inserted, a key provided with teeth adapted to operate in connection with the rack-teeth on the key-arm, a dog pivoted in the case and adapted to engage the lock-lever and hold it in operative position and to be thrown out of engagement with said lock-lever by the insertion of the key.

3. A lock of the class described, provided with a lock-lever having rack-teeth at one end, a key provided with teeth adapted to operate in connection with said rack-teeth, and a tube through which said key is inserted, said tube being provided with inwardly-directed pins, and the shank of the key with longitudinal grooves at the inner end of which is an annular groove.

4. A lock of the class described, provided with a lock-lever having at one end a locking-arm and at the other end a key-arm provided with rack-teeth, a key-tube, and a key adapted to be inserted through said tube, said key being provided with teeth adapted to engage said rack-teeth, and said tube being provided with inwardly-directed pins and said key having longitudinal grooves through which said pins pass and at the inner ends of which is an annular groove.

5. A lock of the class described, provided with a lock-lever having at one end a locking-arm and at the other end a key-arm provided with rack-teeth, a key-tube, and a key adapted to be inserted through said tube, said key being provided with teeth adapted to engage

said rack-teeth, and said tube being provided with inwardly-directed pins and said key having longitudinal grooves through which said pins pass and at the inner ends of which is an annular groove, and a pivoted dog adapted to hold the lock-lever in operative position, said dog being thrown out of engagement with said lever by the insertion of the key.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 23d day of May, 1906.

CHESTER ARTHUR CHUBB.

Witnesses:

JAMES BUCK WARD,  
STEPHEN CHUBB.