No. 648,678. Patented May 1, 1900.

E. E. ANGELL.

ELEVATOR LOCK.

(Application filed May 26, 1899.)

(Model.) 3 Sheets—Sheet 1.

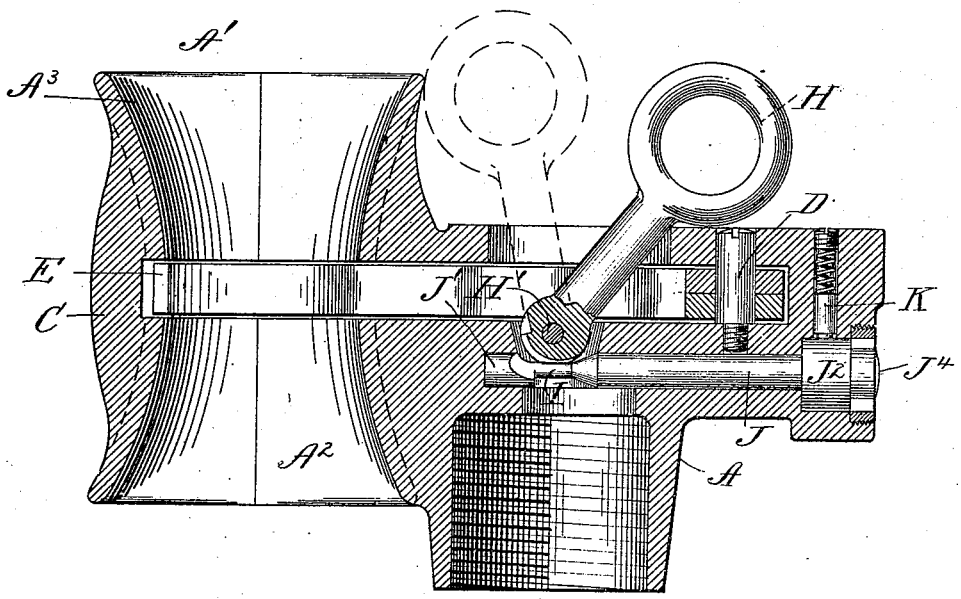

Fig. 1

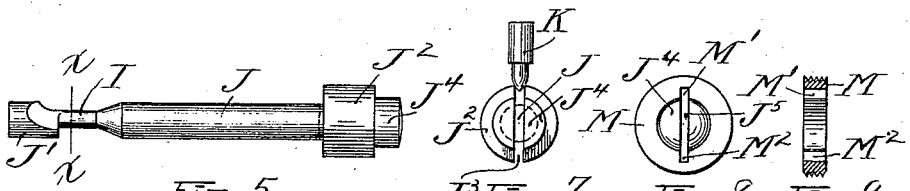

Fig. 5 J³ Fig. 7 Fig. 8 Fig. 9

Fig. 6

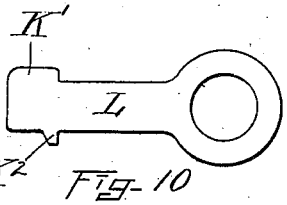

Fig. 10

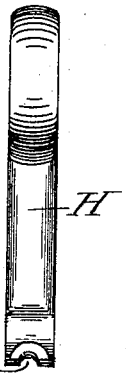

Fig. 11

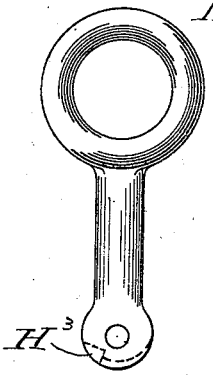

Fig. 12

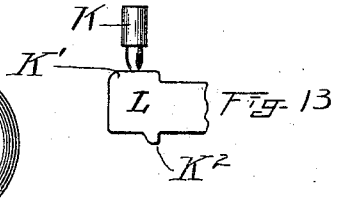

Fig. 13

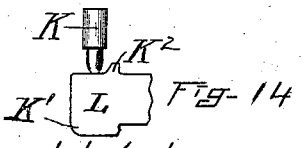

Fig. 14

Witnesses
A. L. Nusser
C. A. Stewart.

Inventor
Edwin E. Angell
By J. S. Rusk
Atty

No. 648,678. Patented May 1, 1900.

E. E. ANGELL.

ELEVATOR LOCK.

(Application filed May 26, 1899.)

(Model.) 3 Sheets—Sheet 2.

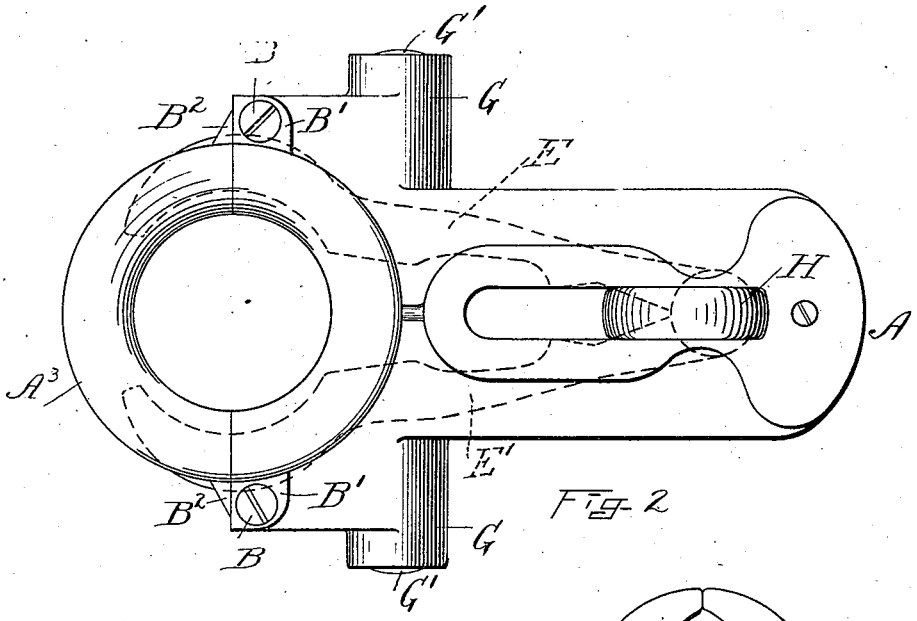

FIG. 2

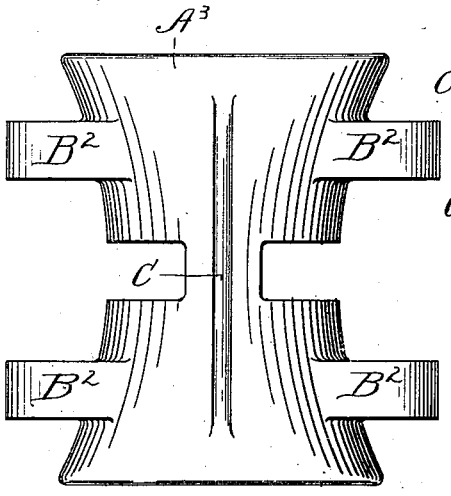

FIG. 3

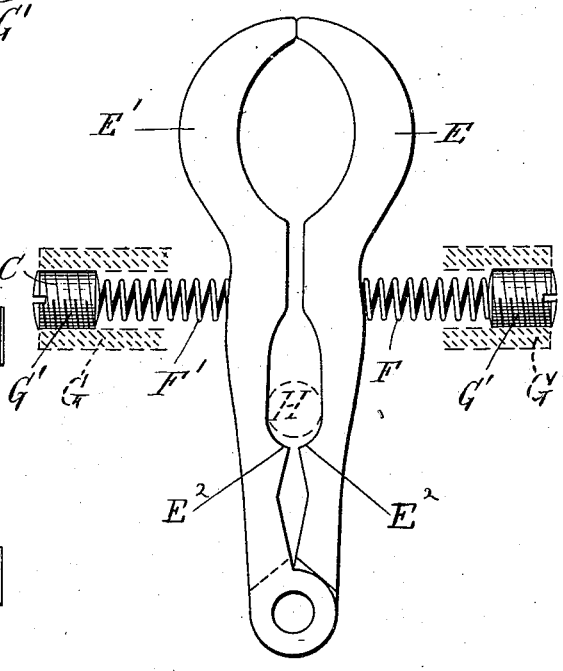

FIG. 4

WITNESSES.
A. L. Wesser
C. A. Stewart.

INVENTOR.
Edwin E. Angell
By J. J. Kusk
Atty

No. 648,678. Patented May 1, 1900.

E. E. ANGELL.

ELEVATOR LOCK.

(Application filed May 26, 1899.)

(Model.) 3 Sheets—Sheet 3.

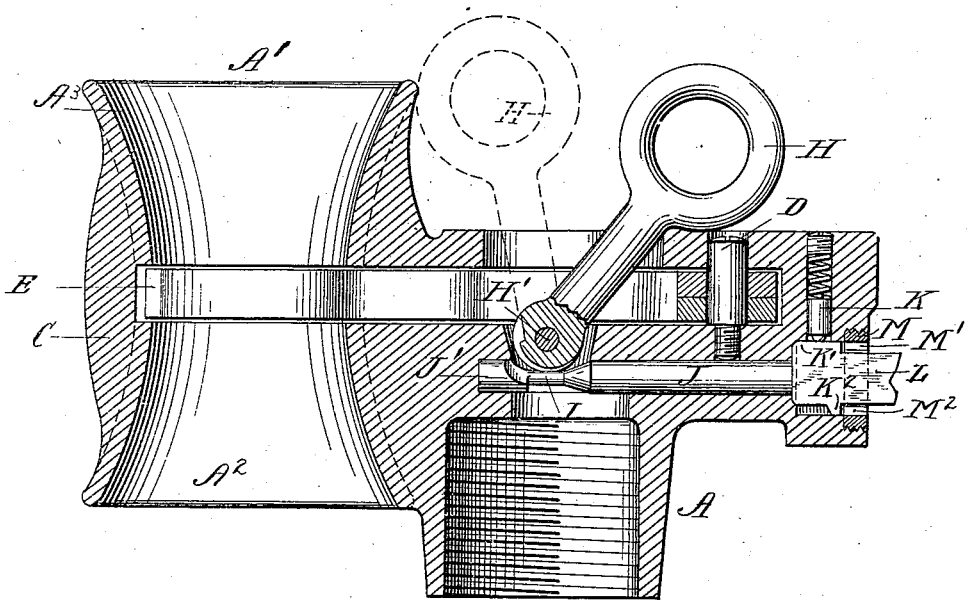

Fig. 15.

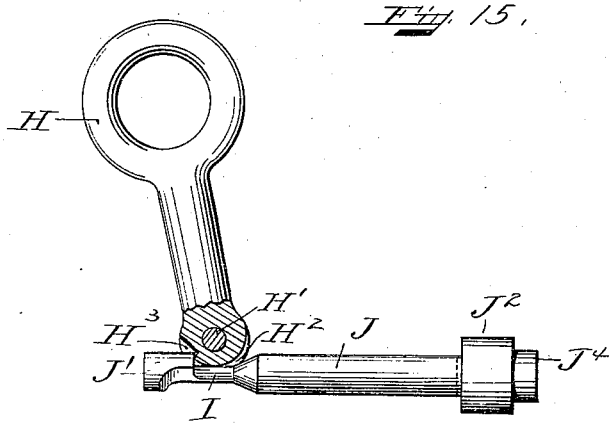

Fig. 16.

Witnesses:
C. A. Stewart
A. L. Musser

Inventor:
Edwin E. Angell
By J. S. Rusk
Atty

UNITED STATES PATENT OFFICE.

EDWIN E. ANGELL, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO THE ANGELL ELEVATOR LOCK COMPANY, OF SACO, MAINE.

ELEVATOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 648,678, dated May 1, 1900.

Application filed May 26, 1899. Serial No. 718,314. (Model.)

To all whom it may concern:

Be it known that I, EDWIN E. ANGELL, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Elevator-Locks, of which the following is a specification.

My invention relates to new and useful improvements in elevator-locks, and is in the nature of an improvement on that disclosed in United States Letters Patent issued to me September 17, 1889, No. 411,274.

The object of my invention is to provide a lock for preventing the jaw-operating lever from being manipulated by persons without authority to use the elevator. In this arrangement the jaws are locked and cannot be unlocked unless a person has a key to unlock the mechanism which allows the movement of the operating-jaw lever for opening the jaws.

My invention consists of certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a longitudinal sectional view through my improved elevator-lock. Fig. 2 is a plan view of the same, showing in dotted lines the jaws opened. Fig. 3 is an end view of the front section of the elevator-lock. Fig. 4 is a plan view of the jaws with the springs for closing the jaws. Fig. 5 is a side view of the locking-spindle. Fig. 6 is a sectional view through the spindle on the line X X, Fig. 5. Fig. 7 is an end view of the locking-spindle. Fig. 8 is an end view of the spindle-retaining nut inclosing the end of the spindle. Fig. 9 is a sectional view through the spindle-retaining nut. Fig. 10 is a side view of the key for operating the spindle. Figs. 11 and 12 are respectively end and side views of the lever for operating the jaws. Fig. 13 shows the insertion of the key and the raising of the ward-pin. Fig. 14 shows the position of the ward-pin after the key is turned. Fig. 15 is a longitudinal sectional view through my improved elevator-lock and showing the key in position. Fig. 16 is a detail view, hereinafter referred to.

Like letters of reference refer to like parts throughout the several views.

The head or holder A is provided on its front end with two trumpet-shaped guides A' A^2. The outer portion A^3 of said guides is secured to the main head by four screws B and lugs B' B^2 in a manner similar to that shown in the patent previously referred to. The outer portion A^3 is provided with a connecting-rib C for the purpose of connecting the top and bottom and strengthening said portion.

Mounted on the screw-pin D are two opposite jaws E E', against which respectively bear the springs F F', held in place in the opposite ears G by the set-screws G'. The operating-lever H is pivoted in the head on the pin H', and its lower end is grooved out at H^2 to fit around the neck I of the locking-spindle J. In advance of said groove H^2 is a recess H^3, and when the locking-lever is thrown forward, as shown in dotted lines, Fig. 1, and the jaws are closed said locking-spindle may be turned by the key L in position for the rear end of the head J' to engage with said recess H^3 (see Fig. 16) and lock the lever against rearward movement, and consequently prevent the opening of the jaws. The spindle J is provided with a shoulder J^3, having a slot J^3, with which is adapted to engage the spring ward-pin K, mounted in the head or holder A, as shown in Fig 1.

With the jaws open, as shown in dotted lines, Fig. 2, with the lever in its rearward position and it is desired to close the jaws, as shown in Fig. 4, the lever H is thrown forward to the position shown in dotted lines, Fig. 1. The key L is then inserted (see Fig. 15) through the spindle-retaining nut M and the slot J^5 in the outer end J^4 of the locking-spindle J. In its insertion the main projection K' on the key L pushes up the ward-pin K from its position in the slot J^3 in the shoulder J^2 of the locking-spindle. With the ward-pin out of the slot the spindle can then be turned half-way by the key to bring the parts into locking position, as previously described, with the key in the position shown in Fig. 14, when the ward-pin K will drop into the opposite side of the slot J^3 in the shoulder J^2.

When this is taking place, the head J′ of the spindle J has passed into engagement with the recess H^3 in the lever H, (see Fig 16,) and inasmuch as the spindle is locked it is obvious that the jaws are held closed by the springs F F′ and cannot be opened until the key is again inserted and the locking-spindle reversed to the position shown in Fig. 1, when the lever can be thrown to the rear and the jaws opened by the lever H bearing against both sides of the cam-shaped jaws E^2. The ear K^2 on the key L passes through the slot M^2 and holds the main projection K′ upwardly in the slot M′ during the passage of the key through the slot J^5 in the end J^4 of the spindle and its entrance into the slot J^3 of the shoulder J^2, and the ward-pin is thus raised by said main projection K′ to admit the turning of the locking-spindle J.

From the above description it is obvious that the jaws cannot be opened and the shipping-rope moved to operate the elevator excepting by an operator who has the key which will unlock the mechanism and allow rearward movement of the jaw-operating lever and consequent opening of the jaws. By this arrangement all danger of unauthorized persons using the elevator will be avoided.

Having thus ascertained the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An elevator-lock consisting of a holder, a pair of spring-closed independent jaws pivoted in said holder, an operating-lever located between said jaws which are recessed to receive the lever and provided with cam-surfaces against which the lever acts to open the jaws when said lever is moved from an inoperative to an operative position, and means for locking said operating-lever in its inoperative position.

2. In an elevator-lock, a holder, a pair of spring-closed independent jaws pivoted in said holder, an operating-lever located between said jaws and adapted to open the same when moved from an inoperative to an operative position, locking mechanism for engaging with said lever when moved to its inoperative position, and means for retaining said locking mechanism in engagement with said lever when in its operative position.

3. In an elevator-lock, a holder, a pair of spring-closed independent jaws pivoted in said holder, an operating-lever located between said jaws and adapted to open the same when moved from an inoperative to an operative position, a rotary spindle for engaging with said lever when in its inoperative position to lock the same against movement, and means for holding said spindle in the position to which moved there being a slot in said spindle into which a key may be inserted to operate said locking mechanism and permit the movement of the spindle to release the operating-lever from its locking position.

4. In an elevator-lock, a holder, a pair of spring-closed independent jaws pivoted in said holder, an operating-lever located between said jaws and adapted to open the same when moved from an inoperative to an operative position, a rotary spindle for engaging with said lever when in its inoperative position to lock the same against movement and adapted to enter a slot in said spindle, and a pin for holding said spindle in the position to which moved there being a slot in said spindle in which a key may be inserted to operate said pin and permit the movement of the spindle to release the operating-lever from its locked position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of May, A. D. 1899.

EDWIN E. ANGELL.

Witnesses:
A. L. MESSER,
C. A. STEWART.