

(Model.)

L. P. JENKS.
COMBINATION PADLOCK.

No. 344,109.

Patented June 22, 1886.

FIG. 1.

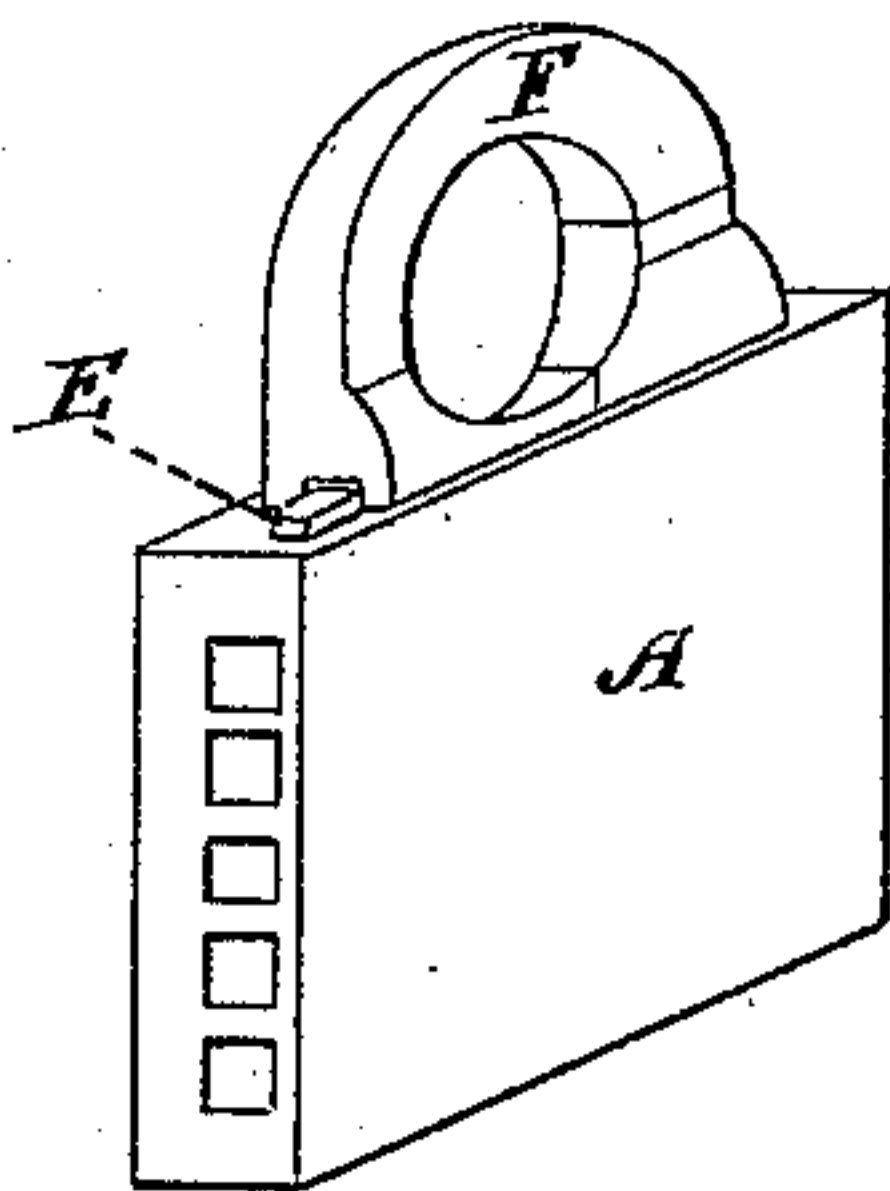


FIG. 2.

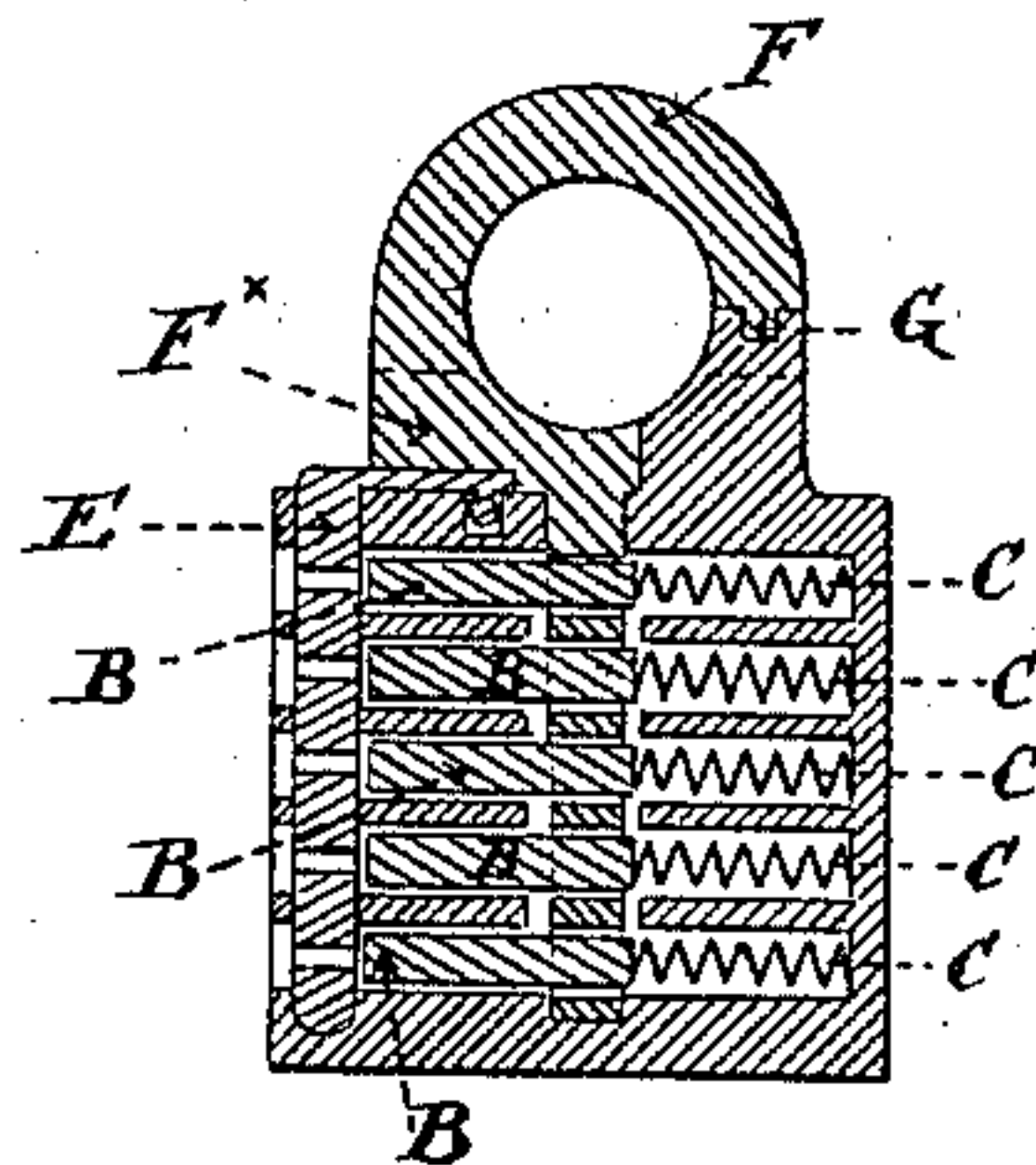


FIG. 3.

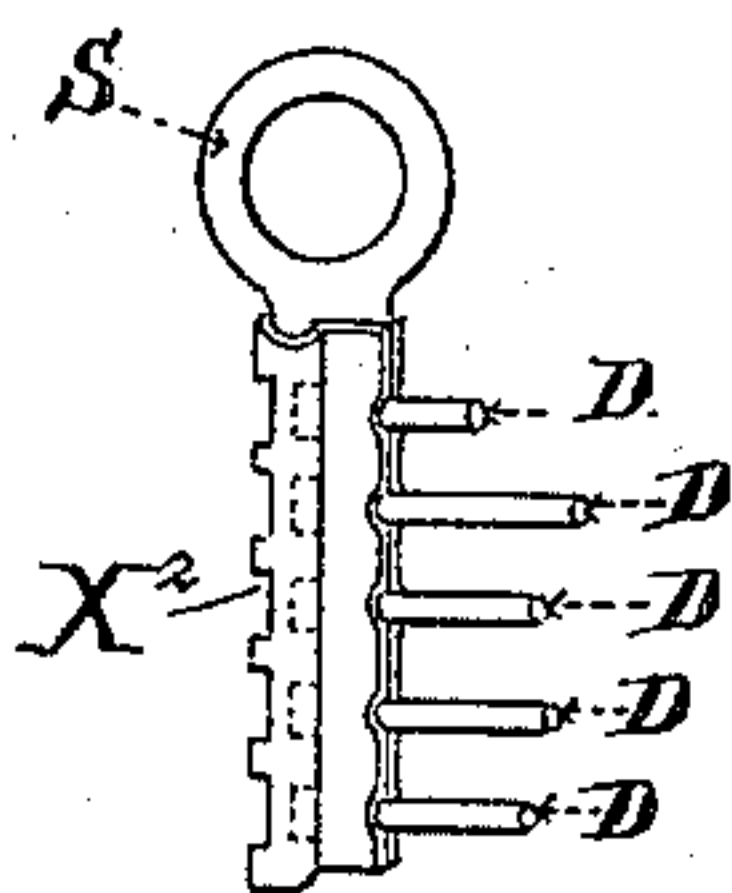


FIG. 4.

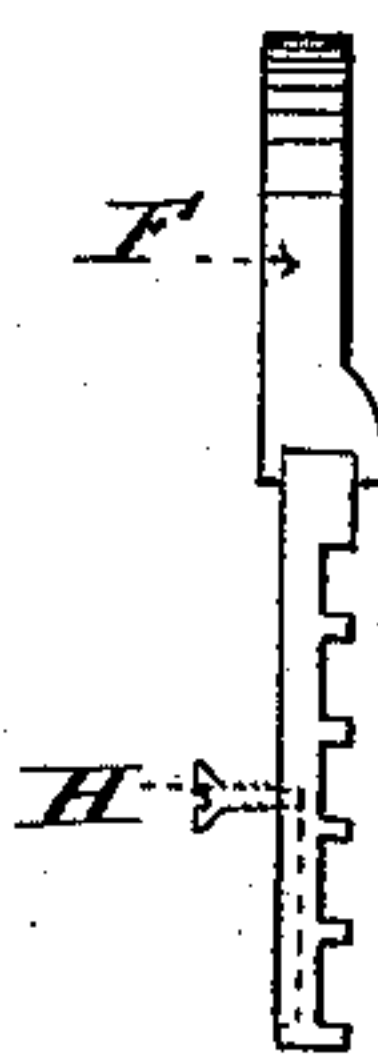


FIG. 5.



Witnesses.

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COMBINATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 344,109, dated June 22, 1886.

Application filed August 31, 1885. Serial No. 175,839. (Model.)

To all whom it may concern:

Be it known that I, LEMUEL POPE JENKS, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Combination-Padlocks, of which the following is a specification.

The nature of my invention is that of a combination-padlock capable of permutation by the change of relative location of three or more sliding bars, adapting it to a similar change in an appropriate key, to which are added devices for keeping the bars in place in the lock; and the object is to furnish a cheap, easily-operated, and secure fastening.

In the drawings, Figure 1 is a view in perspective of my padlock. Fig. 2 is a view of the same in vertical cross-section. Fig. 3 is a view in perspective of the key to the padlock. Fig. 4 is a side view of the hasp to the padlock. Fig. 5 is a top view of the five respective lock-bars of the padlock.

In the drawings, A, Fig. 1, is the padlock-case, made, preferably, of a solid piece of metal bored with (in this case) five holes, called the "lock-bar holes," which are afterward broached to a square shape, as seen at the left-hand edge of the padlock. In these holes are placed the lock-bars B B B B B, Fig. 2, (seen in top view in Fig. 5,) numbered I to V, in which figure the lock-bars are seen to bear, respectively, a notch, (square in this case; but I sometimes make them the shape of a half-circle in top view,) which notches are placed, respectively, at distances from the right-hand ends of the lock-bars varying in regular proportion.

C C C C C, Fig. 2, are springs lying, respectively, in the lock-bar holes, and in operation compressed by the insertion in the latter of the key-rods D D D D D, Fig. 3, and the pressure of the lock-bars to the right, and on the withdrawal of the key-rods pressing the lock-bars forward to the left.

E, Figs. 1 and 2, is the bar-guard—a rod of metal which passes, in a round aperture made for it in the padlock-case, down from the top of the case nearly to the bottom of the same, (but not passing through the bottom,) across the lock-bar holes, and thus holding the lock-bars in their respective holes. The bar-guard

E is seen in Fig. 2 to be bored horizontally with holes large enough to admit the passage of the key-rods D D, &c., but not large enough to let out the lock-bars. The bar-guard is seen to be bent at right angles and flattened at its top, where the horizontal portion rests on the top edge of the padlock-case A and passes in a groove under or in the lower edge of a projection, F^x, Fig. 2, called the "bar-guard cover," from the left-hand side of the ring of the hasp F, (see Fig. 1,) the bar-guard being thus prevented from removal when the hasp is down and locked. (I sometimes provide the right-hand end of this flat projecting portion of the bar-guard, as seen in Fig. 2, with a knob on the under side, entering into a cavity in the upper edge of the case A, to hold the bar-guard in place when the hasp is drawn up.)

F, Fig. 4, side view, is the hasp, seen in Fig. 2 to be composed in part of the ring at the upper end, which ring is cut across at the right-hand side, where its end bears a pin, G, entering into a cavity in the upper end of a projection beneath it from the top edge of the case A, which projection forms part of the complete circle of the ring. This ring has attached to its lower end the hasp proper, which is a square metal bar or a flat strip, (sometimes round,) seen in Fig. 4 to be provided at regular intervals with notches of size permitting the lock-bars to slide readily through them.

H, Fig. 4, is a screw which passes through the back of the lock-case A, its smoothed end entering into a slot in the back of the notched hasp proper. The use of this screw is to prevent the entire detachment of the hasp from the lock-case A when the hasp is unlocked. The key X², Fig. 3, is a plate of steel or of spring-brass furnished with a ring, S, at the top end, and bent as shown, and appropriately grooved at regular intervals on the inner sides where the two edges of the plate meet, and holds five rods, D D D D D, (or any other convenient number, as may be desired,) of different lengths, called the "key-rods." The curved rear edge of the bent plate is seen to be bored with apertures, through which, the meeting sides of the plate being pressed open with the point of a penknife, the key-rods can

be withdrawn and again replaced. The lengths of the key-rods are such that when the rods in unlocking the padlock are pressed into the square holes seen at the edge of the lock-case
 5 A in Fig. 1 they press back the lock-bars B B, &c., respectively—each key-rod acting upon the lock-bar to which its length is adjusted—to such a distance and no farther as will put all the notches in a line, thus admitting the
 10 drawing out (and afterward the reinsertion) of the hasp.

The notched lock-bars, with their springs, the hasp, and the bar-guard, in combination and in another form of lock-case, are adaptable to door and desk locks as well as padlocks.
 15

Operation: The manner in which the notches of the lock-bars, when pressed back by the key-rods as their differing locations on the
 20 lock-bars require, lie in one line, thus permitting the passage by them of the notched hasp, needs no special explanation. It is evident that if the key-rods D D, &c., are not arranged in correspondence with the lock-bars, the
 25 lock-bar notches will not be placed in line and the hasp cannot be withdrawn, and the arrangement of the key-rods being kept secret, the lock is practically inviolable. It is apparent that the number of lock-bars used can be
 30 increased to any reasonable extent, thus increasing the chances against unauthorized opening. With the number of lock-bars at five, the optional changes are one hundred and twenty in number, sufficient for ordinary use.
 35 When it is desired to have a new lock, virtu-

ally, the first and second lock-bars (and also, of course, the key-rods) can be interchanged; next, to make another change, the second and third, and so on. To effect these changes the bar-guard is removed, when the required lock-
 40 bars can be shaken out and replaced, as desired. The bar-guard being replaced and the relative locations in the key of the key-rods being altered in conformity, the lock is again ready for use. I sometimes place an escutcheon over the lock-bar holes, opening like a
 45 door or like a trap-door, or disposed in the ordinary manner with padlock-escutcheons.

I claim—

1. The bar-guard E, in combination with the lock-bars and their springs, the lock-case, and a hasp, all constructed and arranged substantially as shown and described. 50

2. The bar-guard E, in combination with the lock-bars and their springs, the lock-case and a hasp, and the bar-guard cover F^x, projecting from the hasp, all constructed and arranged substantially as shown and described. 55

3. The herein-described key, composed of a bent-up plate of elastic sheet metal, having apertures at the point of bending to admit the insertion and withdrawal of the key-rods, respectively, in combination with said key-rods of different lengths, all constructed and arranged substantially as shown and described. 60 65

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Witnesses:

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