

(Model.)

C. E. & E. G. SMITH.

PERMUTATION PADLOCK.

No. 303,061.

Patented Aug. 5, 1884.

Fig. 1.

Fig. 2.

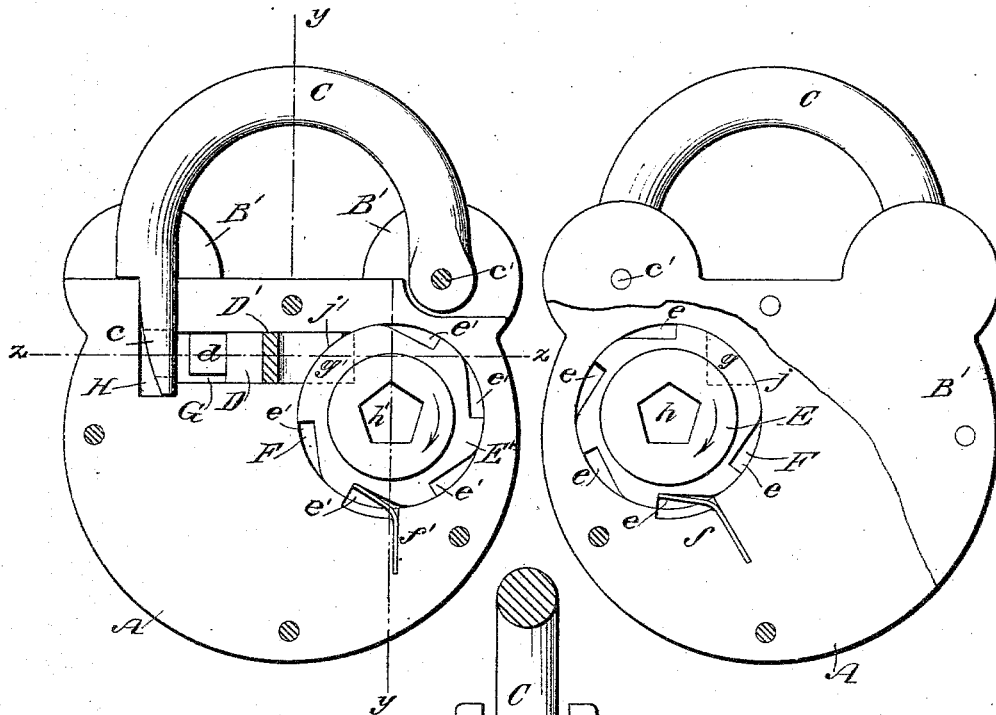


Fig. 3.

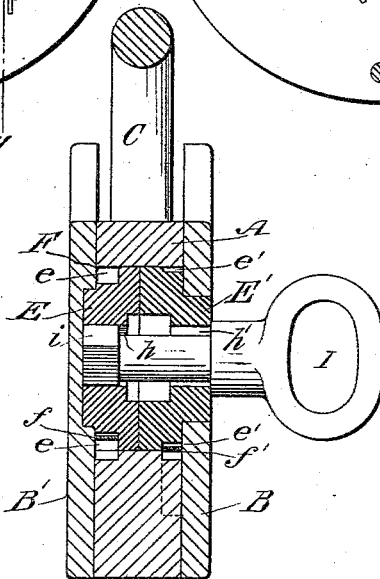
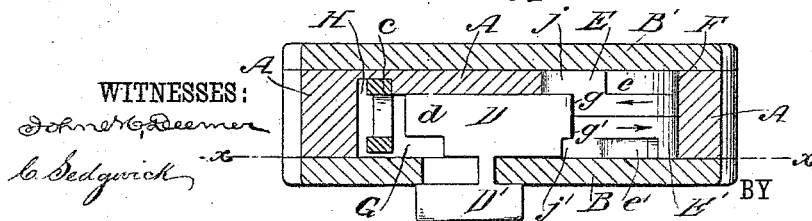


Fig. 4.



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CHARLES E. SMITH AND ELBERT G. SMITH, OF WASHINGTON, GEORGIA.

PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 303,061, dated August 5, 1884.

Application filed December 27, 1883. (Model.)

To all whom it may concern:

Be it known that we, CHARLES E. SMITH and ELBERT G. SMITH, of Washington, in the county of Wilkes and State of Georgia, have invented a new and Improved Padlock, of which the following is a full, clear, and exact description.

This invention relates to a combination-padlock; and it consists of the construction, arrangement, and combination of the parts of the lock, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of our new and improved lock, taken on the line *xx*, Fig. 4, showing the bow C ready to be locked by the locking-bolt D. Fig. 2 is a rear elevation of the lock, a part of the back plate being broken away. Fig. 3 is a transverse sectional elevation taken on the line *yy* of Fig. 1, showing the key in place; and Fig. 4 is a sectional plan view of the lock, taken on the line *zz* of Fig. 1.

The lock is composed of the central block or casting, A, front and back plates, B B', bow C, pivoted at *c*, locking-bolt D, and circular and notched locking nuts or disks E E', placed in the circular recess F, made through the central block, A, as shown clearly in Figs. 3 and 4.

The locking-bolt D is placed in the chamber G, made in the central block, A, lateral to and intersecting the circular chamber F; and this chamber G is also lateral to and intersects the chamber H, which is made in the central block, A, and adapted to receive and to have locked in it by the nose *d* of the locking-bolt D the apertured end *e* of the bow C, the bolt D being adapted to be moved longitudinally in chamber G by the outside button, D', for locking and releasing the said apertured end of the bow C, as will be understood from Figs. 1 and 4.

The disks E E' are held in the recess F of the central block, A, by the front and back plates, B B', and are adapted to be revolved in opposite directions independently of each other by the key I, and they serve the double purpose of locking and releasing the locking-bolt D and of furnishing the combination of

the lock. For the latter purpose the disks E E' are oppositely notched at their outer peripheral edges, as shown at *e e'*, which notches act, respectively, in conjunction with the springs *f f'*, held at opposite sides of the block A, for giving signals as the disks are turned. These springs *f f'* also act as pawls in the notches *e e'* to prevent the disks E E' from being turned in the wrong direction. For releasing the bolt D, so that it may be moved backward by the button D' for unlocking bow C, the inner peripheral edges of the disks E E' are correspondingly cut away or recessed at their inner or contiguous peripheral edges, as shown at *g g'*, which recesses, when it is desired to unlock the bow C, must be brought together and both in line with the rear end of the bolt D, as shown in Fig. 4, to permit the said bolt to be moved backward, as at all other positions the edges of the said nuts hold the bolt D forward in position for locking the bow C. The disks E E' are each formed with the corresponding key-openings, *h h'*, to receive the narrow head *i* of the key I, so that the disks E E' may be turned by the key independently of each other; and the notches *e e'* are made in the disks in such manner as to leave the corresponding plain surfaces, *j j'*, of considerable length between the two notches immediately in front and rear of the recesses or notches *g g'*, thus causing an interval or break to take place in the clicking of the springs *f f'* in notches *e e'* when the disks are turned by the key, thus furnishing an index for operating the lock.

To open the lock, the key I will be inserted through opening *h'* in disk E' into opening *h* in disk E and turned to the left, which will turn disk E in the direction of the arrow in Fig. 2, and cause the spring *f* to click as the notches *e* pass it. The disk E will be turned in this manner until it is noticed that there is one long interval between the clicks. After this interval (not counting the click at the close of the interval) the said disk will be still further turned by the key until three clicks are heard, which indicates that the recess *g* is exactly in line with the bolt D. The head *i* of the key I is then withdrawn from opening *h* in disk E to the opening *h'* in disk E', and then turned to the right, which will cause the disk E' to be turned in the di-

recession of the arrow shown in Fig. 1, causing the spring f' to click as the notches e' pass it. The disk E' will be turned in this manner until one long interval between the clicks is heard, caused by the plain portion j' passing the spring. After this long interval the disk E' is to be still further turned to the right until one click more is heard, which indicates that the recess g' is exactly in line with the bolt D and coincident with the recess g , in which position the bolt D is free to be withdrawn from the opening c of the bow C by applying the hand to the button D' , thus leaving the bow free to be opened.

15 In locking, the bow is simply to be closed into the body of the lock and the bolt D shoved forward and the key I applied and the disks $E E'$ (one or both) turned to the right and left to carry the recess g or g' out of line with the bolt and to bring a solid portion of the disks in line with the bolt, thus locking the bolt in its forward position.

Although we have shown and described our invention as applied to padlocks, it will be understood that the principle may be applied to locks of various forms and not depart from the spirit of our invention.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a lock, the combination of the sliding bolt D , provided with the thumb-piece D' , projecting through the case, for operating said

bolt, with the oppositely-revoluble disks $E E'$, formed with recesses $g g'$ in their adjacent peripheral edges, whereby when said recesses are brought into alignment with each other and the bolt the said bolt may be thrown or retracted, substantially as set forth.

2. In a lock, the combination of the sliding bolt, and means for operating the same, with the oppositely-revoluble disks $E E'$, provided with the recesses $g g'$, and with oppositely-inclined notches on their peripheries, and springs for engaging said notches, whereby the disks are prevented from turning in the wrong direction and means is afforded of ascertaining when the sliding bolt and the recesses in the disks are in alignment, substantially as set forth.

3. The disks $E E'$, formed with notches $e e'$, recesses $g g'$, and plain surfaces $j j'$, in combination with the springs $f f'$ and the sliding locking-bolt D , all arranged to operate substantially as and for the purposes set forth.

4. In a padlock, the central casting, A , formed with the recess F , for receiving the disks $E E'$, lateral recess G , for receiving the bolt D , and the recess H , for receiving the apertured end of the bow C , substantially as described.

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Witnesses:

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