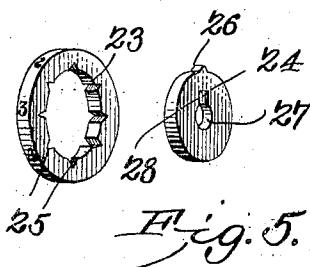
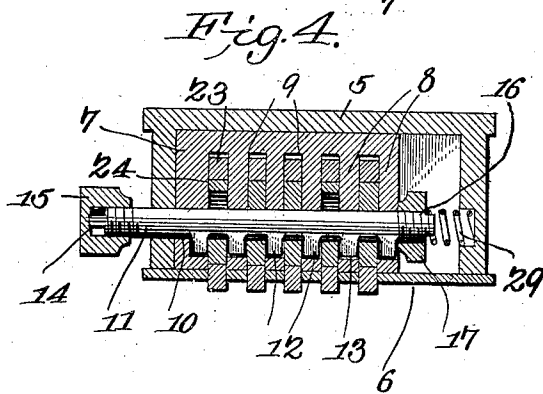
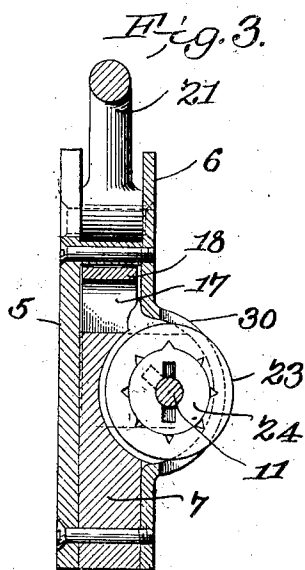
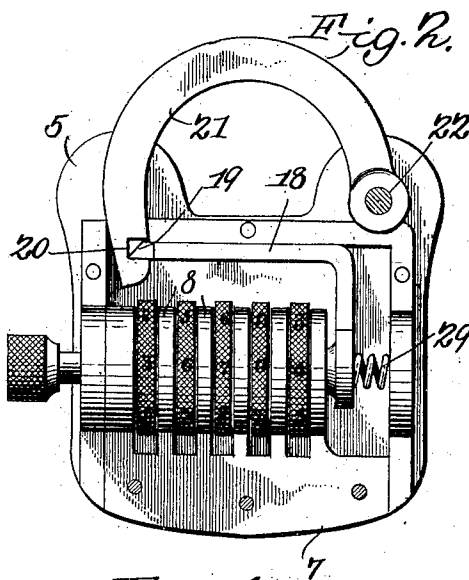
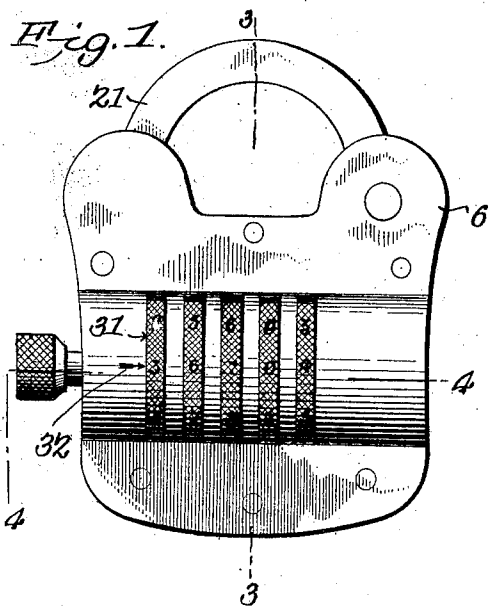


No. 839,795.

PATENTED DEC. 25, 1906.

F. S. WILCOX.  
COMBINATION LOCK.  
APPLICATION FILED MAY 11, 1906.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

FERDINAND S. WILCOX, OF BRYAN, TEXAS, ASSIGNOR OF ONE-HALF TO  
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## COMBINATION-LOCK.

No. 839,795.

Specification of Letters Patent.

Patented Dec. 25, 1906.

Application filed May 11, 1906. Serial No. 816,384.

*To all whom it may concern:*

Be it known that I, FERDINAND S. WILCOX, a citizen of the United States, residing at Bryan, in the county of Brazos and State of Texas, have invented a new and useful Combination-Lock, of which the following is a specification.

This invention relates to permutation-locks, and has for its object to provide a comparatively simple and inexpensive device of this character particularly designed for use as a padlock and which cannot be opened except by the owner or other person familiar with the combination.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability, and efficiency, as well as to reduce the cost of manufacture.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, and illustrated in the accompanying drawings, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of a permutation-lock constructed in accordance with my invention. Fig. 2 is a front view of the lock with the face-plate removed. Fig. 3 is a vertical sectional view taken on the line 3 3 of Fig. 1. Fig. 4 is a longitudinal sectional view taken on the line 4 4 of Fig. 1. Fig. 5 is a perspective view of the sections comprising one of the tumblers detached.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved device is preferably in the form of a padlock and consists of a rear plate 5 and a front plate 6, between which is interposed a spacing-block 7, provided with a plurality of spaced plates or partitions 8, defining intermediate recesses 9. Threaded through alined apertures 10 in the plates or partitions 8 is a spindle 11, provided with spaced lugs or projections 12, adapted to enter correspondingly shaped recesses 13, formed in the partitions 8 and communicating with the openings or recesses 10, as shown.

One end of the spindle 11 is passed through an opening in the adjacent end wall of the rear plate 5 and is provided with a reduced angular extension 14 and a threaded portion for the reception of a finger-piece or cap 15, while the opposite end of the spindle is threaded in an opening 16 of a latch 17. The latch 17 is provided with an angular arm 18, the free end of which is inclined or beveled at 19 and adapted to engage a recess 20 in a shackle 21, the latter being pivotally mounted between the front and rear faces of the casing, as indicated at 22.

Mounted for rotation on the spindle 11 and interposed between the partitions 8 are a plurality of locking-tumblers adapted to engage the lugs 12 and lock the spindle against longitudinal movement. The locking-tumblers are each formed of two sections 23 and 24, the section 23 being preferably in the form of a ring the periphery or exterior wall of which is stamped or otherwise formed with letters, numbers, or other symbols, as shown, while the interior walls of the ring are formed with a series of spaced V-shaped notches or recesses 25, adapted to receive a peripheral spur or projection 26, extending laterally from the adjacent section 24 of said tumbler. The section 24 of each tumbler is formed with a central recess 27, disposed concentric with and adapted to receive the spindle 11, each section being also provided with a slot 28, communicating with the opening 27 and adapted to receive the adjacent lug 12 on the spindle when the several tumblers are properly alined to permit the opening of the lock.

By having the tumblers formed in two or more sections the combination of the lock may be readily changed by removing the interior section 24 and partially rotating the same so that the spur or projection 26 will enter a different recess in the member 23, as will be more fully explained hereinafter.

As a means for normally retaining the active end of the latch 18 in the path of movement of the pivoted shackle 21 a coiled spring 29 is interposed between one of the end walls of the rear plate 5 and the adjacent end of the spindle 11.

The face-plate 6 is bowed laterally, as indicated at 30, and provided with a plurality of spaced recesses 31, so as to expose the numbers or symbols on the several tumblers and

also to permit the latter to be conveniently manipulated.

In order to release the shackle 21, the tumblers are rotated until the letters or symbols forming the desired combination are arranged in alinement with a suitable index 32, and in which position the recesses 28 in the several tumblers will be disposed in alinement with the locking-lugs on the spindle, so that by pressing inwardly on the finger-piece or cap 16 the spindle 11 will be moved longitudinally of the casing against the action of the spring 29, thus withdrawing the latch 18 from engagement with the shackle and permitting the latter to be moved to open position. To lock the shackle, it is merely necessary to depress the free end of the same and exert an outward pull on the cap 15, which causes the lugs 12 on the spindle to enter the recesses 13 in the partitions, thus permitting the several tumblers to be rotated on the spindle until the notches or recesses 28 are arranged to one side of the lugs 12, thereby effectually preventing longitudinal movement of the spindle and securely locking the shackle in closed position. In order to change the combination of the lock, the several tumblers are first arranged in alinement, as before described, after which the spindle is moved longitudinally of the casing and the cap removed from the end of the spindle and the extension of the latter gripped with a wrench or other suitable tool and rotated until the threaded end 16 of the spindle is released from the latch 18. The spindle 11 is then withdrawn through one end of the casing and the several tumblers removed, after which the detachable sections 24 of one or more of the tumblers are also removed and partially rotated, being again placed in position with the lugs 26 engaging different recesses in the member 23, so that in order to aline the openings 28 with the lugs 12 a different symbol on the rings or tumblers will have to be presented to the openings in the front plate of the casing.

It will of course be understood that the lock may be made in different sizes and shapes and that any number of tumblers may be employed at will.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art, and further description thereof is deemed unnecessary.

Having thus described the invention, what is claimed is—

1. In a lock, a casing, a longitudinally-movable spindle having its opposite ends threaded and one end thereof extended through the adjacent wall of the casing and provided with a reduced squared terminal, a cap covering the squared terminal and engaging the adjacent threads on the spindle, lugs extending laterally from the spindle,

tumblers mounted for rotation on the spindle and provided with recesses for the reception of the lugs, a shackle, and a latch engaging the opposite threaded end of the spindle and movable by the latter into and out of engagement with the shackle.

2. In a lock, a longitudinally-movable spindle having its opposite ends threaded and one end thereof reduced to form a squared terminal, a finger-piece covering the squared terminal and engaging the threads on the adjacent end of the spindle, lugs extending laterally from the spindle, tumblers mounted for rotation on the spindle and provided with recesses for the reception of the lugs, a shackle, and a sliding latch one end of which is threaded on the opposite end of the spindle and having its free end inclined or beveled for engagement with the shackle, said latch being actuated by the movement of the spindle.

3. In a lock, a casing, a longitudinally-movable spindle disposed within the casing and having one end thereof threaded and extended through the adjacent wall of the casing and provided with a reduced squared terminal, a cap engaging the threads on the spindle and covering the squared terminal thereof, a plurality of tumblers mounted for rotation on the spindle and provided with recesses for the reception of the locking-lugs, a shackle, a latch engaging the threaded end of the spindle and movable into and out of engagement with the shackle, and a spring interposed between the latch and the casing.

4. In a lock, a casing, a block disposed within the casing and provided with spaced arms forming partitions having alined openings formed therein, a spindle passing through said openings and having one end thereof provided with a terminal finger-piece and its opposite end threaded, lugs extending laterally from the spindle, tumblers mounted for rotation on the spindle between the partitions and provided with recesses for the reception of the locking-lugs, a shackle, a latch engaging the threaded end of the spindle and movable into and out of engagement with the shackle, and a spring interposed between the latch and the casing.

5. In a lock, a casing having one wall thereof bowed laterally and provided with spaced slots, a spindle disposed within the casing and having one end thereof threaded and its opposite end extended through the adjacent wall of the casing and provided with a terminal finger-piece, a plurality of tumblers mounted for rotation on the spindle in said slots and provided with recesses for the reception of the lugs, a shackle, and a latch carried by the spindle and movable by the latter into and out of engagement with the shackle.

6. In a lock, a casing having one wall thereof bowed laterally and provided with spaced vertically-disposed slots, a block interposed

between the walls of the casing and provided  
with spaced perforated partitions, a spindle  
threaded through the perforations in the par-  
titions and having one end thereof threaded  
5 and its opposite end extended through the  
adjacent walls of the casing and provided  
with a terminal finger-piece, lugs extended  
laterally from the spindle, tumblers mounted  
for rotation on the spindle between the par-  
10 titions and having their peripheries extended  
through the slots in the casing, said tumblers  
being each formed of a plurality of sections

one of which is provided with a recess for  
the reception of the adjacent locking-lug, a  
shackle, and a latch engaging the threaded 15  
end of the spindle and movable by the latter  
into and out of engagement with the shackle.

In testimony that I claim the foregoing as  
my own I have hereto affixed my signature  
in the presence of two witnesses.

FERDINAND S. WILCOX.

Witnesses:

A. B. WILCOX,  
JOHN W. NICOL.