A. RUDY.

PERMUTATION PADLOCK.

APPLICATION FILED OCT. 3, 1911.

1,041,516. Patented Oct. 15, 1912.

Fig. 1

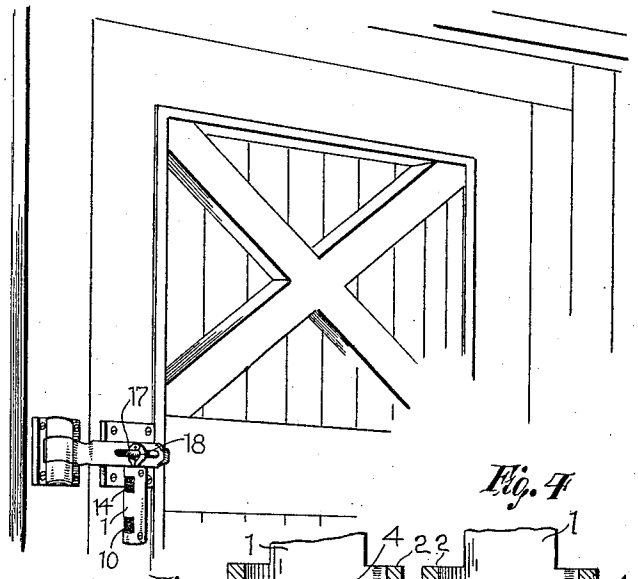


Fig. 3

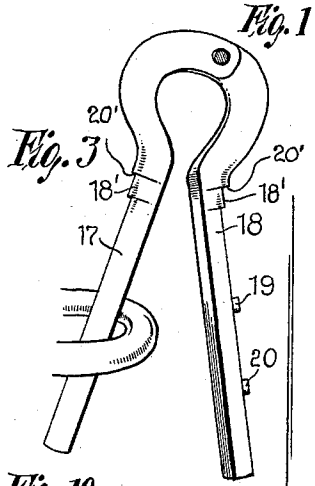


Fig. 10

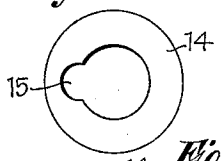


Fig. 9

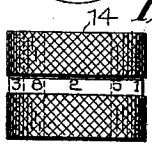


Fig. 11

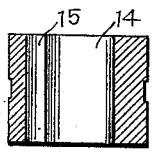


Fig. 13

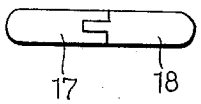


Fig. 2

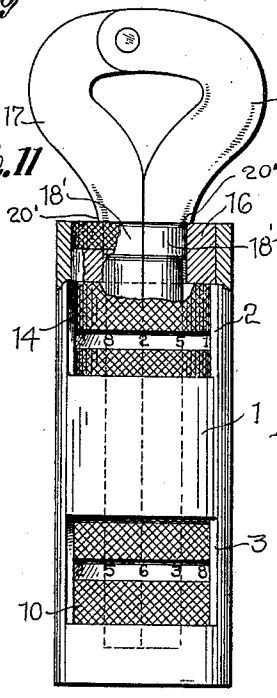


Fig. 4

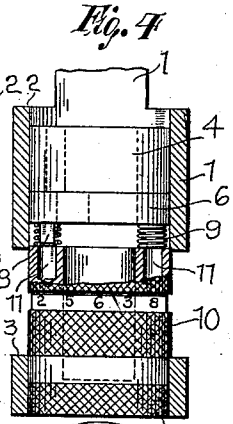


Fig. 5

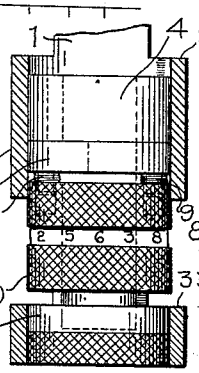


Fig. 7

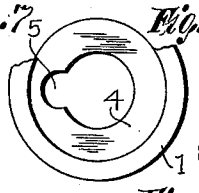


Fig. 6

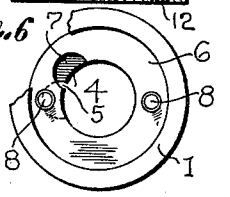


Fig. 12

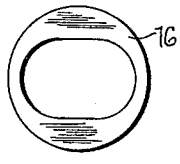
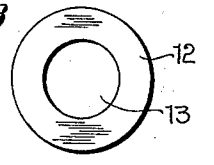


Fig. 8



Witnesses

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UNITED STATES PATENT OFFICE.

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PERMUTATION-PADLOCK.

1,041,516. Specification of Letters Patent. Patented Oct. 15, 1912.

Application filed October 3, 1911. Serial No. 652,507.

To all whom it may concern:

Be it known that I, ANDREW RUDY, a citizen of the United States, residing at Sunman, in the county of Ripley and State of Indiana, have invented certain new and useful Improvements in Permutation-Padlocks, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to pad-locks of the type known as permutation padlocks, and the principal object of the same is to so construct a padlock that a person who is not acquainted with the method of setting the combination will be unable to do so.

This invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a view showing a door provided with a hasp which is locked by the improved padlock. Fig. 2 is an enlarged view of the improved padlock, a portion of the same being broken away. Fig. 3 is an enlarged perspective view of the shackle which is used in connection with this padlock. Fig. 4 is an enlarged sectional view through the lower portion of the padlock and shows the operating mechanism in an operative position. Fig. 5 is a view similar to Fig. 4 showing the operating mechanism in a position to set the combination. Fig. 6 is a view looking through the end of the padlock with the lower disk and actuating cylinder removed. Fig. 7 is a view similar to Fig. 6 with the lower locking disk removed. Fig. 8 is a view of the inner face of the bottom disk. Fig. 9 is a view in side elevation of the locking cylinder. Fig. 10 is an end view of Fig. 9. Fig. 11 is a sectional view through the cylinder shown in Fig. 9. Fig. 12 is an end view of the top disk of the padlock. Fig. 13 is an edge view of the head of the shackle.

Referring to the accompanying drawings by numerals, it will be seen that this padlock comprises a cylindrical casing 1 which is provided with upper openings 2 and lower openings 3 which are provided to permit the symbols marked upon the actuating cylinders to be seen.

A disk or partition 4 is rigidly secured in the casing between the upper and lower openings 2 and 3, and has the walls of its central opening provided with a groove 5 leading from one side to permit the passage of the shackle which will be described later on.

A locking disk 6 is placed in the casing beneath the disk 4 and is provided with a recess 7 which is adapted to be brought into registry with the groove 5. A pair of lugs 8 are formed upon the face of the disk 6 and a coil spring 9 is mounted upon each of the lugs so that the actuating cylinder 10 will be normally held below the heads of the lugs 8. The actuating cylinder is provided in its inner face with a pair of sockets 11 which are so positioned that they may register with the lugs 8. The actuating cylinder is provided with a roughened outer surface and with a number of indicating symbols, such for instance as the numerals shown.

A closing plug 12 having a central well 13 is rigidly mounted in the bottom of the casing and prevents the actuating cylinder from dropping out. A locking cylinder 14 is placed above the disk 4 and is also provided with a groove 15 formed in the wall of its central opening. This cylinder shows through the upper openings formed in the casing and is provided with a roughened outer face and also with indicating symbols such for instance as the numbers shown. This cylinder is adapted to be turned so that the groove 15 will register with the groove formed in the disk 4 so that the shackle can be passed through the disk. The upper closing disk 16 is placed in the top of the casing and is provided with a substantially oval shaped central opening to permit the shackle to pass through and also serves to prevent the shackle from turning in the lock.

The shackle comprises a pair of arms 17 and 18 which are hinged together at their upper ends to form an eye. The arms are each provided near the head with an enlarged portion 18′ which form a collar of approximately the same shape as the opening formed through the disk 16 when the arms are brought together and providing the shoulders 20′ which prevent the shackle from passing any farther into the lock. The arm 18 is provided with a pair of lugs 19 and 20 which serve to lock the shackle in the lock. When this padlock is in a locked position the shackle is positioned in the casing through the openings formed in the disks and cylinders and has its lower end resting in the central wall of the plug 12. The lug 19 is positioned in the groove 5 of the disk 4 and the lug 20 is positioned just below the edge of the locking disk 6.

After the shackle is in place the locking cylinder is turned so that the groove 15 is not in alinement with the groove 5 and the lug 19 is therefore prevented from passing through the disk 14. The actuating cylinder 10 is pressed toward the upper end of the casing and against the tension of the springs 9 until the lugs 8 enter the sockets 11. The cylinder and the disk are then turned until the lug 20 comes in contact with one of the lugs 8. The cylinder is then released and will be moved to the normal position by the springs 9 and the shackle will be securely locked in the casing.

When it is desired to unlock the improved padlock the upper cylinder is turned to the proper place as is common with ordinary padlocks so that the groove 15 will register with the groove 5. The lower cylinder is then moved inwardly so that the lugs 8 will fit into the sockets 11 and the cylinder and disk can then be turned to the proper place to bring the notch 7 in alinement with the grooves 5 and 15.

From all outward appearances it would seem that this padlock works as all combination locks are worked—that is, to merely turn the actuating cylinders until the grooves are brought into alinement and unless the party who is attempting to open the padlock was aware of the fact that this padlock had a locking disk which could only be operated by moving the actuating cylinder inwardly they could not open the padlock. It would therefore be apparent that this lock is a great deal safer than the padlocks which are now on the market. After the shackle is in position the enlarged portions 18′ which fit in the oval opening formed in the upper disk 16 prevent the shackle from being turned and therefore makes it more difficult to open this padlock.

What I claim is:—

1. A padlock comprising a casing provided with upper and lower openings, a disk rigidly mounted in said casing between said openings, a locking cylinder mounted in said casing above said disk and exhibited through said upper opening, a locking disk mounted in said casing below said stationary disk, lugs carried by said locking disk, an actuating cylinder mounted in said casing below said locking disk and provided with sockets in which said lugs are adapted to fit, said actuating cylinder being exhibited through said lower opening and said locking disk being hidden in said casing, springs surrounding said lugs and bearing against said actuating cylinder, and normally holding said actuating cylinder in a position to prevent said lugs entering said sockets, and a shackle constructed to be locked by said locking disk and locking cylinder.

2. A padlock comprising a casing, a stationary disk mounted in said casing, a locking disk mounted in said casing beneath said stationary disk, a locking cylinder mounted in said casing above said stationary disk, said cylinder and disks being provided with central openings having grooves formed in the walls of said openings adapted to be brought in alinement, an actuating cylinder mounted in said casing beneath said locking disk and adapted to engage said locking disk to rotate the same to bring its groove in alinement with the groove of the stationary disk, means for normally holding said actuating cylinder out of engagement with said locking disk, a shackle having its arms passing through said cylinders and disks, and lugs carried by said shackle, one of said lugs being positioned in the groove of said stationary disk, and the remaining lug being positioned beneath said locking disk between said locking disk and actuating cylinder.

3. A padlock comprising a casing, a stationary disk mounted in said casing, a locking cylinder rotatably mounted in said casing above said stationary disk, a locking disk rotatably mounted in said casing beneath said stationary disk, a shackle constructed to be locked by said locking disk and locking cylinder, an actuating cylinder mounted in said casing beneath said locking disk, means carried by said locking disk adapted to be engaged by said actuating cylinder for rotating said locking disk, and means for normally holding said actuating cylinder out of engagement with said locking disk.

4. A padlock comprising a casing, a locking disk rotatably mounted in said casing, a locking cylinder mounted in said casing, an actuating cylinder mounted in said casing and adapted to engage said locking disk, a plug mounted in said casing for closing the lower end of said casing, said plug being provided with a central socket and said disk and cylinders provided with central openings formed in alinement with said socket, a disk mounted in the upper end of said casing, provided with an irregularly shaped central opening registering with the opening in said locking cylinder, and a shackle passing through said openings into said socket and provided with an enlarged shoulder at its outer end portion conforming to the shape of the opening in said upper disk and abutting against said locking cylinder to limit the inward movement of said shackle.

5. A padlock comprising a casing, a partition in said casing, a locking cylinder to one side of said partition, a locking disk at the opposite side of said partition, a shackle adapted to be locked by said disk and cylinder, actuating means for bringing said disk into and out of operative position, means carried by said disk adapted to be engaged by said actuating means, and means for nor-

mally holding said actuating means out of engagement with said last-mentioned means.

6. A padlock comprising a casing, a locking disk mounted in said casing, a shackle adapted to be locked by said disk, actuating means for said disk mounted in said casing, means carried by said disk and adapted to be engaged by said actuating means to bring said disk into and out of operative position, and means carried by said last-mentioned means for normally holding said actuating means in spaced relation to said disk.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

ANDREW RUDY.

Witnesses:

C. E. BERNETT,

JOHN F. STAHLEY.