J. T. B. WILLIAMS.

PERMUTATION PADLOCK.

APPLICATION FILED JULY 26, 1911.

1,074,029. Patented Sept. 23, 1913.

Fig. 1.

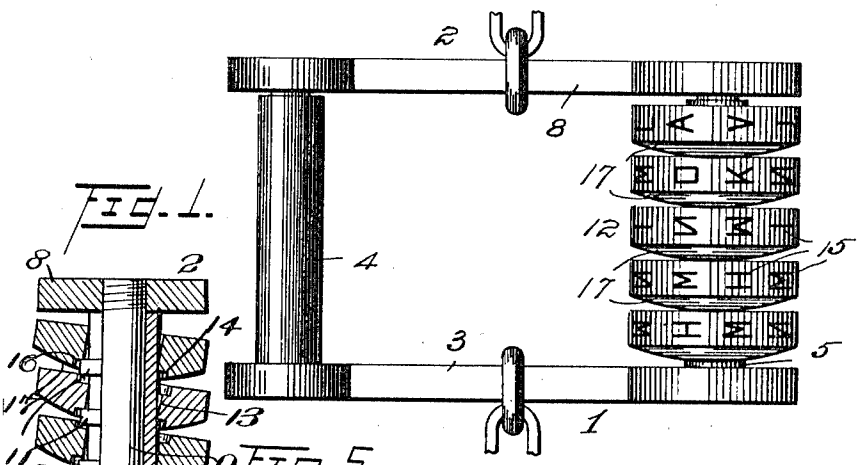


Fig. 5.

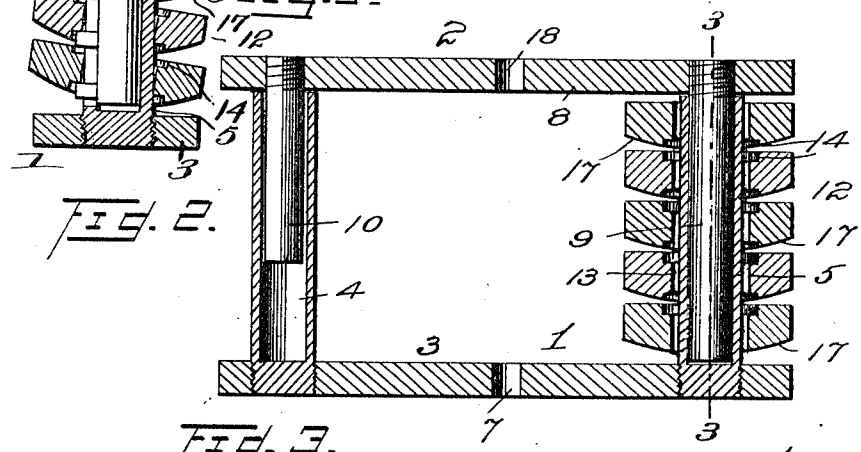


Fig. 2.

Fig. 3.

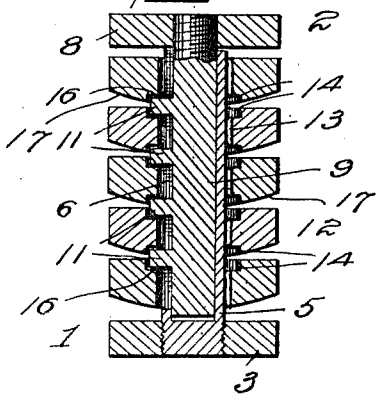
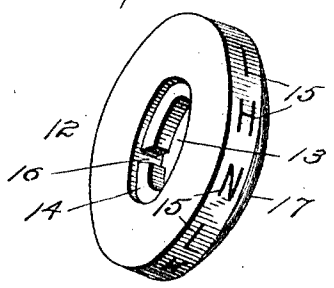


Fig. 4.



Inventor

John T. B. Williams

By Victor J. Evans

Attorney

Witnesses

H. C. Duffy

Wm. T. Fretter.

UNITED STATES PATENT OFFICE.

JOHN T. B. WILLIAMS, OF VICKSBURG, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO CORNELIUS R. CUSTARD, OF VICKSBURG, MISSISSIPPI.

PERMUTATION-PADLOCK.

1,074,029. Specification of Letters Patent. Patented Sept. 23, 1913.

Application filed July 26, 1911. Serial No. 640,557.

To all whom it may concern:

Be it known that I, JOHN T. B. WILLIAMS, a citizen of the United States, residing at Vicksburg, in the county of Warren and State of Mississippi, have invented new and useful Improvements in Permutation-Padlocks, of which the following is a specification.

The present invention relates to permutation padlocks.

In carrying out my invention I propose to employ a pair of substantially U-shaped co-acting members one of which being provided with solid arms and one of the said solid arms being provided with spaced bits, the second U-shaped member having hollow arms within which the solid arms of the first named member are adapted to be received, one of the hollow arms being slitted to permit of the insertion of the bits provided upon one of the solid arms, the said bits being adapted to extend a suitable distance through the slit, a plurality of rotatable tumblers are also employed, the tumblers being provided with substantially enlarged bores and being further provided with bit openings, the said tumblers having flattened upper faces and rounded under faces, and, whereby, when an outward pressure is exerted between the two U-shaped members, and after one or more of the tumblers have been rotated to bring its bit passage out of the path of the bits, the said bit or bits contacting with the tumbler or tumblers will tilt the same to cause the wall of the bore to bite against the hollow arm, upon which they are positioned, and thereby prevent the separation of the said U-shaped members.

In the drawing forming part of this specification there has been illustrated a simple and preferred embodiment of the improvement, it being understood, however, that changes in the minor details as to form, shape, proportion material, etc., which fall within the scope of the appended claim may be made if desired.

In the drawings, Figure 1 is a perspective view of the improved permutation pad lock. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a section taken on the line 3—3 of Fig. 2. Fig. 4 is a perspective view of one of the rings or tumblers. Fig. 5 is a sectional view illustrating the manner in which the tumblers frictionally engage with one of the posts when contacted by one or more of the bits of the said post in a fraudulent attempt to open the lock.

The lock contemplates a pair of substantially U-shaped sections which are designated in the drawings by the numerals 1 and 2 respectively. The section 1 comprises a flattened plate 3, having secured adjacent the opposite ends thereof and upon one of its faces tubular members which are designated respectively by the numerals 4 and 5. The tubular member 5 is provided with a longitudinally extending slit or opening the same being designated by the numeral 6. This slit 6 extends from the plate 3 to the open end of the cylinder 5 and is adapted for a purpose which will presently be set forth. The plate 3 may and preferably is provided with a central opening 7 whereby this member of the lock may be sustained by a suitable chain as illustrated in Fig. 1 of the drawings. The tubular members 4 and 5, it is to be stated, are arranged at a direct right angle to the plate 3. The member 2 also contemplates a flattened plate 8 having its opposite ends provided with posts 9 and 10. These posts are preferably rounded and are adapted to be inserted within the tubular members 4 and 5. The post 9 is formed with a plurality of spaced outwardly extending bits 11, the same being of a sufficient length to project through the slot 6 a suitable distance beyond the tubular member 5. Surrounding the tubular member 5 is a plurality of rotatable tumblers 12. These tumblers have their bores each of a greater area than the circumference of the tubular member 5, and what may be termed the under faces of each of the said tumblers is of a rounded or convex formation as designated by the numeral 17, while the opposite or upper face of the said tumblers are each flattened or straight. The tumblers 12 are each provided adjacent their central opening or bore 13 and upon their opposite faces with an annular depression 14 which intersects the said bore, and the said depressed portions are adapted to serve as pockets for the reception of the projecting portions of the bits 11 of the post 9. The tumblers are each formed with a cut away portion 16 which communicates with the bore and which is adapted to form a passage for the bits of the post when the right combination upon the tumblers has

been reached and the member 2 is to be removed from the member 1. Each of the tumblers is provided upon its outer face with a plurality of indicating marks, 15, certain of the said marks being, of course, adapted to register when the proper combination of the tumblers has been reached. The bar 2 may be, and preferably is, provided with an opening 18 for the reception of a suitable chain.

As heretofore stated the bores 13 of the tumblers are of a greater area than the transverse sectional area of the cylinder 5, and it will be noted that should an attempt be made to forcibly separate the sections 1 and 2 before the proper combination is reached, the bit of the post 9 will contact with the wall provided by the recess 14 and thus swing or tilt its particular tumbler so that the same will have the wall of its bore sustained at an angle to and brought into frictional engagement with the cylinder 5, and thus prevent the separation of the members 1 and 2.

I am aware of the fact that devices of a construction similar to mine have heretofore been produced and I do not claim such a structure broadly; but

What I do claim is:—

The herein described construction of locks embodying a pair of substantially U-shaped members, the arms of one of the members being tubular, one of said tubes being slitted its entire length, the arms of the second U-shaped member being solid and being adapted to be received in the tubular arms of the first named member, one of the solid arms having spaced bits which pass within and extend beyond the slit in the tubular arm when the members are assembled, a plurality of rotatable tumblers upon the slitted tubular arm of the first named member, said tumblers having bores of a greater area than the circumference of the slitted tubular arm, the said tumblers having both their upper and lower faces recessed to provide passages whereby the tumblers may be rotated upon the slitted tubular arm of the first named member, and around the projections of the bits, each of the said tumblers being further provided with a bit passage which is arranged adjacent to and which communicates with the bore of the tumbler, one of the faces of each of the tumblers being flat, the opposite face of each of the tumblers being rounded and the rounded faces of each of the tumblers adapted to rest upon the flat faces of the adjacent tumblers, and whereby when any or all of the bits are out of register with one or all of the bit passages and a pressure is exerted between the lock members, the wall or walls provided by the recesses of the tumblers will be contacted by the bit or bits to incline the tumbler or tumblers, and to force the diagonally opposite edges of the wall or walls forming the bore or bores of the same into frictional contact with the slitted tubular arm to prevent the separation of the U-shaped members.

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

JOHN T. B. WILLIAMS.

Witnesses:

C. R. CUSTARD,

A. B. REID.