E. A. CHRISTOPH.

PADLOCK MECHANISM.

APPLICATION FILED NOV. 29, 1918.

1,419,359. Patented June 13, 1922.

Fig. 1.

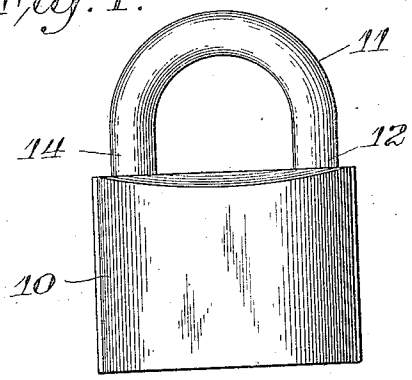


Fig. 2.

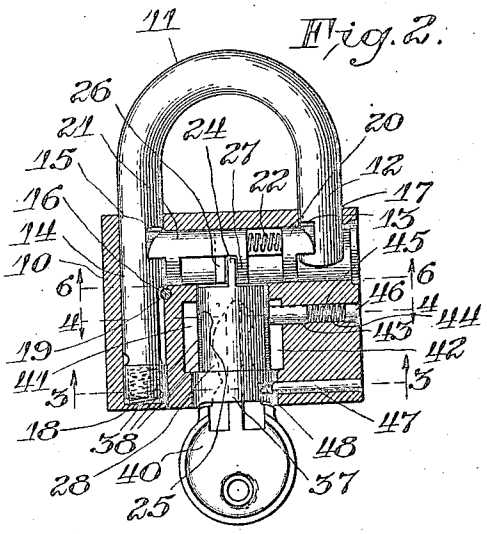


Fig. 3.

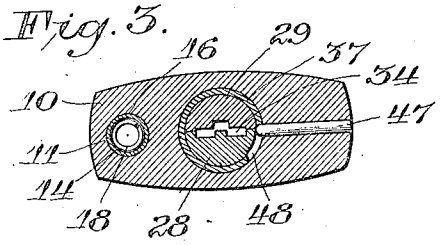


Fig. 4.

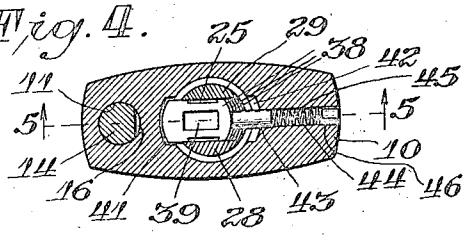


Fig. 5.

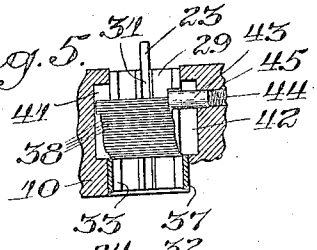


Fig. 6.

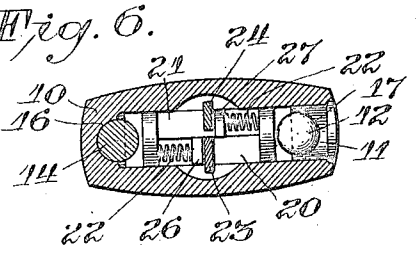


Fig. 7.

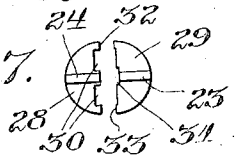


Fig. 8.

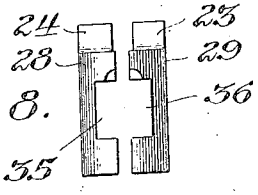
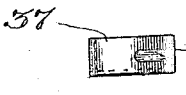


Fig. 9.



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PADLOCK MECHANISM.

1,419,359. Specification of Letters Patent. Patented June 13, 1922.

Application filed November 29, 1918. Serial No. 264,729.

To all whom it may concern:

Be it known that I, EMIL A. CHRISTOPH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Padlock Mechanism, of which the following is a full, clear, and exact specification.

My present invention relates to improvements in padlock mechanism.

The main object of my invention is to improve the construction and to render more effective and efficient the operation of a padlock having a body portion made of a single piece of metal.

A further object of my invention is to so construct the key actuated portions of my improved lock that they may be more readily assembled, and the cost of manufacture materially reduced.

In carrying out the objects of my invention, I employ novel features which will be more fully set forth in the following specification and more particularly defined in the appended claims.

In the accompanying drawings—

Figure 1 is a side elevation of the padlock embodying my invention;

Fig. 2 is a sectional elevation through the body portion of the padlock, showing certain parts of the operating mechanism in full elevation;

Fig. 3 is a sectional plan view along the line 3—3 of Fig. 2;

Fig. 4 is a sectional plan view along the line 4—4 of Fig. 2;

Fig. 5 is a partial sectional elevation along the line 5—5 of Fig. 4, showing the tumbler plates and tumbler operating pin in elevation;

Fig. 6 is a sectional plan view along the line 6—6 of Figure 2 in the direction indicated by the arrows;

Figs. 7 and 8 are bottom view and side elevation respectively of the split plug; and

Fig. 9 is a view of the cap or ring which surrounds and holds in position the two halves of the split plug.

Referring now to the drawings, the body portion 10 of my improved padlock is made of a single piece of metal, preferably a block cut from a bar of extruded metal. The shackle 11 is formed with a short leg 12 provided with the locking notch 13, and a long leg 14 provided with a locking notch 15. The long leg 14 of the hasp operates in the drilled hole 16 in the body, and the short leg 12 operates in the drilled hole 17 in the body. The shackle spring 18 normally tends to force the shackle out of said drilled openings; the outward movement, however, being limited by the hasp retaining pin 19.

Two locking dogs 20 and 21 are normally held in the notches 13 and 15 respectively by the springs 22. These dogs are withdrawn from said notches to release the shackle by the action of the projecting lugs 23 and 24 on the rotatable plug which co-operate respectively with the lugs 26 and 27 on said dogs.

The rotatable tumbler carrying plug is made up of two semi-cylindrical portions 28 and 29, having key engaging longitudinal slots 30 and 31 formed on their flat opposing surfaces 32 and 33 in such a manner that when the two portions of the split plug are brought together a key slot 34, as shown in Fig. 3, is formed. Also formed in the opposing surfaces of the plug portions are transverse slots 35 and 36, which co-operate to form the transverse tumbler holding opening 25 through the rotatable plug when the portions are assembled. The portions of the split plug are held together in operative position by the plug retaining ring or cap 37.

The tumbler plates are thin strips of metal 38 which are mounted side by side in the transverse opening 25, and are capable of movement freely relative to each other and relative to the rotatable plug, transversely thereto, in and through said opening 25. The tumbler plates are provided with openings 39 to receive the key 40 upon the irregular edges of which they are carefully fitted so as to present aligned surfaces on opposite sides of the plug, and not projecting beyond the cylindrical surface of the plug when the key is in position in the key slot of the plug. When the key 40 is withdrawn from the plug, the tumbler plates are thrown by the movement of the key into one of the locking grooves or recesses 41 or 42 in the body, thereby preventing the rotative movement of the plug. This movement of the tumbler plates into locking position is preferably assisted by the plunger pin 43 and its operating spring 44, which is held in position in the drilled opening 45 by the

plug 46. The rotative movement of the plug in the body is limited by the plug retaining pin 47, which co-operates with the groove 48 in the plug. This pin also prevents the removal of the plug from the body.

When it is desired to open the padlock the key is inserted in the key slot of the rotatable plug, thereby aligning the outer edges of the tumbler plates with each other and with the cylindrical surface of the plug, and withdrawing the plates from the locking grooves or recesses in the body portions against the action of the spring pressed pin 43. The plug may then be rotated by means of the key, and the lugs 23 and 24 forced against the lugs 26 and 27 on the locking dogs, thereby moving said oppositely movable dogs out of the notches 13 and 15, and releasing the shackle which is then forced outwardly by the spring 18.

While I have illustrated and described the preferred form of my invention, it must be understood that many modifications may be made without departing from the spirit of my invention or its scope as set forth in the following claims.

What I claim is:

1. A tumbler supporting plug for a lock, said plug being made up of two semi-cylindrical portions having tumbler receiving openings, and a cap member at one side of the tumblers receiving openings for holding said semi-cylindrical portions together.

2. A tumbler supporting plug for a lock, said plug being made up of two semi-cylindrical portions, and a cap member for holding said semi-cylindrical portions together, said semi-cylindrical portions being provided with longitudinal and transverse grooves which when the two portions are placed together form respectively a key slot and a transverse opening for the reception of a plurality of tumbler plates.

In testimony whereof I affix my signature.

EMIL A. CHRISTOPH.