

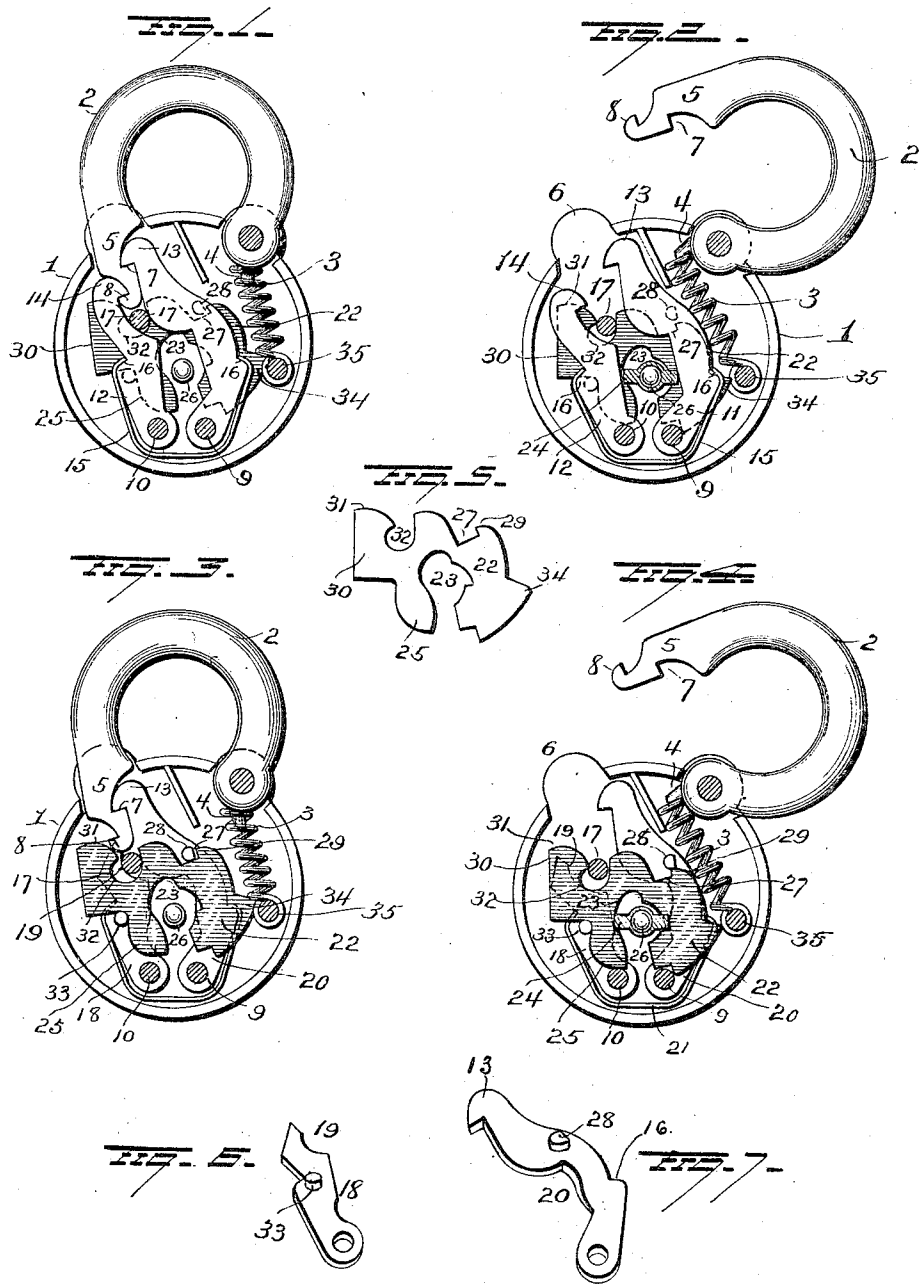
C. A. ERICHSON.

PADLOCK.

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1,127,213.

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WITNESSES

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PADLOCK.

1,127,213.

Specification of Letters Patent.

Patented Feb. 2, 1915.

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To all whom it may concern:

Be it known that I, CHARLES A. ERICHSON, a citizen of the United States, and a resident of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Padlocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in locks and more particularly to pad-locks of that type in which oppositely disposed pivoted tumblers for coöperation with the shackle are employed and in which a guard lever is provided for normally preventing movement of the tumblers to release the shackle, except by the use of a proper key.

The object of my present invention is to simplify and improve the mechanism of pad-locks of the type specified, and to render efficient the operation of a freely mounted guard lever to dog or lock one of the tumblers in a manner to prevent possibility of jarring or otherwise surreptitiously releasing the nose of the shackle from locked engagement with the tumblers.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a face view of a pad-lock (with one side of the casing removed) showing an embodiment of my invention, with the shackle in locked position; Fig. 2 is a similar view, showing the relative positions of the parts with the shackle in released position; Figs. 3 and 4 are views similar to Figs. 1 and 2 respectively, with all the tumblers except one, removed, to more clearly illustrate the relations of the guard lever to the other parts with which it coöperates; Fig. 5 is a separate view of the guard lever; Fig. 6 is a detail view of the pivoted link 18, and Fig. 7 is a detail perspective view of the tumbler 20.

1 represents the casing of the lock and 2 the shackle pivotally attached thereto,—a spring, such as shown at 3 for example, being employed to engage a lug 4 on the heel of the shackle and force the latter to its open position as shown in Figs. 2 and 4.

The nose 5 of the shackle enters the casing 1 through a peripheral opening 6 therein, and is recessed to form shoulders 7 and 8 for coöperation with locking tumblers mounted within the casing as hereinafter explained.

Located in the lower portion of the casing, are posts 9—10 upon which the two banks 11—12 of locking tumblers are pivotally mounted,—the tumblers 11 being made longer than the tumblers 12 so that when the two banks of tumblers shall have been assembled within the casing, their shouldered upper ends 13—14 which receive the shoulders in the nose of the shackle, will be in proper position to engage said nose when the latter enters the casing. The tumblers of the two banks of tumblers are normally pressed toward each other by means of springs 15, each of said springs embracing a tumbler of each bank and engaging shoulder 16 thereon, as shown in Figs. 1 and 2. When the shackle is in locked position as shown in Fig. 1, the two banks of tumblers will be disposed at respective sides of a post 17 fixed within the casing. A link or lever 18 is pivotally mounted on the same post 10 with the short tumblers 12 and is provided with a recessed upper end 19 which engages the post 17 when the parts are in locked position as most clearly shown in Fig. 3. One tumbler (20) of the bank of tumblers 11, is disposed opposite the link or lever 18, and a spring 21 embracing said link or lever and tumbler 20 and engaging suitable shoulders thereon, tends to press these members toward each other. A guard lever 22 is mounted freely within the casing and is disposed transversely over the tumbler 20 and link or lever 18, and under the remaining tumblers of the respective banks. The guard lever is formed with an opening 23 to receive a key 24 which may be inserted into the lock between the respective banks of tumblers. One side of the opening 23 of the guard lever is formed with a depending tongue 25, the inner edge of which is eccentric to a key post 26 disposed between the banks of tumblers and passing through the opening in the guard lever, so that when the key is inserted into the lock and turned, its engagement with the eccentric edge of the tongue 25 will move the guard lever, for a purpose presently explained. The guard lever is also formed in its upper edge with

a recess 27 to receive a pin or projection 28 on the tumbler 20,—one end of wall of said recess forming a tooth 29 which, when the parts are in locked positions as shown in Figs. 1 and 3, becomes disposed behind the pin or projection 28 on the tumbler 20 to normally prevent the latter from being jarred or surreptitiously forced out of locked engagement with the nose of the shackle. The guard lever is provided at the end opposite that on which the tooth 29 is formed, with an arm 30, the upper end of which is formed with a cam edge 31 and below said upper end of the arm 30, a recess 32, having a curved wall, is formed to receive the post 17. At the juncture of the outer edge of the tongue 25 with the lower edge of the arm 30, the guard lever bears laterally against a pin 33 fixed to the link or lever 18.

When the parts are in their normal locked positions as shown in Figs. 1 and 3, the spring 21 will serve to press the tumbler 20 toward the nose of the shackle as before explained, and it will also press the link or lever 18 inwardly, causing the engagement of the pin 33 on said link or lever to press the guard lever laterally and retain the tooth 29 on said lever behind the pin or projection 28 on the tumbler 20. When a key 24 applied to the key post 26, is turned, it will engage the inner cam edge of the tongue 25 on the guard lever and press the same laterally against the yielding resistance of the spring-pressed link or lever 18, thus causing said guard lever to be rocked on the bearing of its arm 30 against the end of the nose of the shackle and the right-hand end of said guard lever to be thereby caused to descend a sufficient distance to move the tooth 29 out of the path of the pin or projection 28 on the tumbler 20. Continued turning of the key will now cause the tumbler 20 and also the banks of tumblers 11 and 12 to be moved out of engagement with the nose of the shackle, thus releasing the latter and permitting it to be forced open by the action of the spring 3. Should the key be now removed from the lock, the springs 15 will operate to press the banks of tumblers inwardly slightly beyond their normal locked positions. At the same time, the spring 21 will press the tumbler 20 inwardly slightly past its normal locked position, and the guard lever will be pressed laterally by said spring 21 until the recessed arm 30 of said guard lever will rest against the post 17 and the tail 34 of said guard lever becomes disposed against the post 35 to which the spring 3 is attached. When the guard lever is in this position, the cam upper edge 31 of the arm 30 will be disposed below the upper ends of the bank of tumblers 12 and in the path traversed by the nose of the shackle when

the latter is forced into the lock casing, and the tooth 29 will be below and out of the path of the pin or projection 28 on the tumbler 20. If the shackle be now pressed into position for locking, the engagement of its nose with the cam upper ends of the tumbler 20 and the banks of tumblers 11—12, will cause said tumblers to be moved backwardly to permit the entrance of the nose. As the nose continues to move into the lock casing, it will engage the cam edge 31 at the upper end of the guard lever arm 30 and press the guard lever laterally (against the resistance of the spring-pressed link or lever 18) until the tail 34 of said guard lever moves out of engagement with the post 35. During the last portion of the entering movement of the nose 5, the shoulders 7—8 thereof will pass the shoulders of the tumblers and the latter will promptly engage the shouldered nose 5. At the same time, the lateral movement of the guard lever will cause its release from the post 35 (as before explained) and said guard lever will be free to be rocked (on the nose of the shackle as a bearing) by the action of the spring-pressed link or lever 18, so as to cause the tooth 29 of the guard lever to become disposed behind or in the path of the pin or projection 28 on the tumbler 20.

Slight changes might be made in the details of my improvements without departing from the spirit of my invention or limiting its scope, and hence I do not wish to restrict myself to the precise details herein set forth.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a pad-lock, the combination with a casing and a shackle having a shouldered nose, of a spring-pressed tumbler to engage said nose, a guard lever mounted freely in said casing for locking said tumbler, and a spring-pressed link or lever engaging said guard lever and affording a movable pivotal bearing for the latter and also retaining the same in locked position when the shackle is locked.

2. In a padlock, the combination with a casing, and a shackle having a shouldered nose, of a spring-pressed tumbler to engage said nose, a guard lever mounted in said casing for locking said tumbler, a spring-pressed link or lever having a pin constituting a bearing for one edge of said guard lever, and means for holding said guard lever in unlocked position when the shackle has been released and the key withdrawn.

3. In a padlock, the combination with a casing, and a shackle having a shouldered nose, of a spring-pressed tumbler to engage said nose, a guard lever mounted in said casing for locking said tumbler, a spring-pressed link or lever provided with a pin

engaging one edge of said guard lever, said guard lever having a tongue to be engaged by a key for moving the guard lever against the resistance of the spring-pressed link or lever to unlock the tumbler, and means for holding the guard lever in unlocked position.

4. In a padlock, the combination with a casing, and a shackle having a shouldered nose, of a spring-pressed tumbler to engage said nose, a guard lever to lock said tumbler, said guard lever having a depending tongue and an upwardly projecting arm, a spring-pressed link or lever provided thereon with a pin engaging the guard lever at the juncture of the edges of said tongue and arm, and said arm having a cam upper edge to engage the nose of the shackle, and a fixed abutment in position to be engaged by said arm of the guard lever.

5. In a padlock, the combination with a casing, and a shackle having a shouldered

nose, of a spring-pressed tumbler to engage said nose, said tumbler provided with a pin or projection, a guard lever having a tooth to cooperate with said pin or projection and lock the tumbler, said guard lever having a tail portion, a fixed abutment for said tail portion, said guard lever also having a depending tongue and an upwardly projecting arm at the end of the guard lever opposite said tail portion, a spring-pressed lever having a part engaging the guard lever at the juncture of the outer edges of said tongue and arm, the upper end of said arm having a cam edge to engage the shackle nose, and a fixed abutment for said arm.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

CHARLES A. ERICHSON.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."