(No Model.)

G. D. SPIELMAN.

PADLOCK.

No. 461,134. Patented Oct. 13, 1891.

Fig. 1.

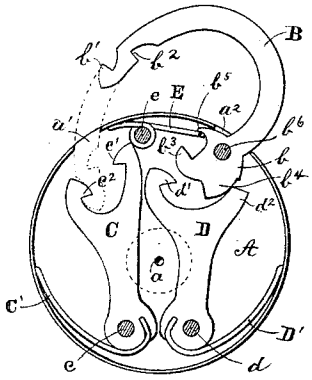


Fig. 2.

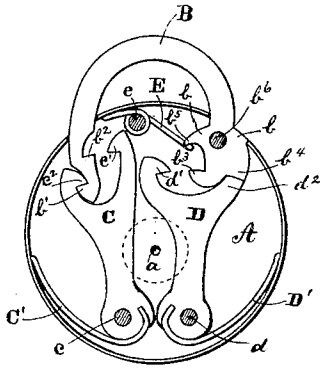


Fig. 3.

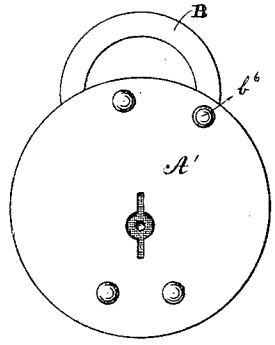


Fig. 4.

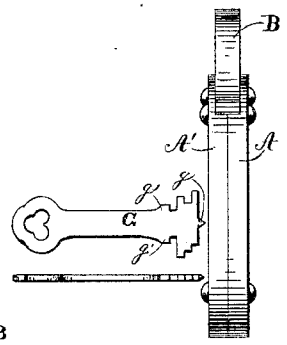


Fig. 5.

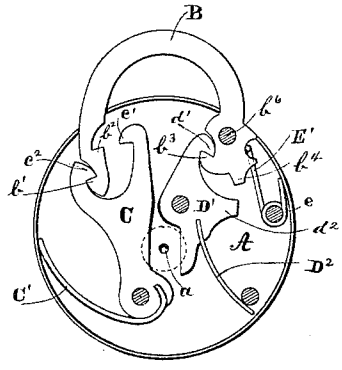


Fig. 6.



Witnesses
Frank S. Davis.
M. F. Murray

Inventor
George D. Spielman

By his Attorney
Geo. F. Murray

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE D. SPIELMAN, OF CINCINNATI, OHIO, ASSIGNOR TO ANDREW J. PARLIN, OF NEWPORT, KENTUCKY.

PADLOCK.

SPECIFICATION forming part of Letters Patent No. 461,134, dated October 13, 1891.

Application filed April 27, 1891. Serial No. 390,569. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. SPIELMAN, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Padlocks, of which the following is a specification.

My invention relates to an improvement in padlocks. Its object is to produce a compact durable lock that will be practically impossible to open by a false key or by jarring or other known means.

With these objects in view my invention consists in the peculiar combination and arrangement of mechanism hereinafter fully described, illustrated in the accompanying drawings, and particularly referred to and pointed out in the claim.

Referring to the drawings, in which like parts are indicated by similar reference-letters wherever they occur throughout the various views, Figure 1 is a front elevation of the lock with the cap removed and the shackle thrown open. Fig. 2 is a similar view in the closed position. Fig. 3 is a front elevation of the lock-case with the shackle closed. Fig. 4 is an edge elevation of the lock-case and a front and edge view of the key. Fig. 5 is a front elevation of a modified form of my invention in the closed position, the front cap being removed, as in Figs. 1 and 2. Fig. 6 is a sectional detail view of the lock-case.

Referring to the parts, A is the lock-case, which is preferably made circular in form and stamped or drawn up from sheet-steel. A′ is the cap, similar in shape, except that the part A has a shoulder or offset formed by an annular rabbet a^3 on its outside, and A′ a similar offset upon the inside, so that the parts match together and form a close secure joint, as seen in Fig. 6. The edge of both parts are notched at a' a^2 to allow the shackle B to play through these notches. The notch a' is of a size to snugly fit the shackle when closed, and the pivoted portion of the shackle B is so curved at b that it closes the notch a^2 when the shackle is in either the open or closed position, so that the lock-case when the shackle is closed has practically no opening into it except the key-hole.

The lock-case is fitted with two sets of pivoted locking-tumblers C D. These are so arranged that one set locks one end of the shackle and the opposite set locks the opposite end. The shackle is therefore double-locked when pressed to the closed position. The tumblers are also so arranged that both sets must be simultaneously turned to the exact position before the shackle can escape, and if any one tumbler of either set is turned too far or not far enough the shackle will not be released, although all of the other tumblers may be brought into alignment.

Referring to Figs. 1 and 2, the tumblers C and D are pivoted upon studs c d, arranged upon opposite sides of the diametrical center of the case. The free or swinging ends of the tumblers C are bifurcated and the opposite fingers terminate in hooked detents c' c^2. In their normal positions these tumblers are forced against the coil of the shackle-throwing spring E, which is turned around a stud-pin e by a spring C′, one end of which is seated in a notch near the lower end of the tumbler and bears against the edge of the case. The swinging end of the shackle B is notched upon each side to form hooks b' b^2. When the shackle is forced to its closed position, its beveled nose presses back the tumblers C until it reaches the limit of its inward movement, when the tumblers snap back to their normal position, the hooks c^2 and b' engaging and locking the shackle against retraction until the tumblers are retracted by the proper key. Should a false key be used and any one of the tumblers C (and there may be any number of them desired) be thrown too far, the hook c' will be thrown over the hook b^2 and the shackle still retained in position. There is barely space between the hooks c' c^2 to allow the latch end of the shackle to be withdrawn when all of the detents c' c^2 are in alignment and the tumblers C turned just far enough to disengage the hooks b' c^2. The tumblers D have hooked ends or detents d', which engage with a hook b^3 on the pivoted end of the shackle B should a false key be used. They have also curved recesses terminating in arms d^2, which when the shackle is closed abut against an offset or shoulder b^4, formed upon the pivoted end of the shackle, and lock it in the closed position, as seen in

Fig. 2, until the tumblers D are turned against the pressure of springs D′ (which are similar to springs C′) far enough to throw the arm d^2 from under the offset b^4. Should a false key be used and the tumblers D, or any one of them be thrown too far, hook d' will catch over the hook b^3 and prevent the opening of the shackle. The spring E, which is coiled around the stud e, has one of its ends bearing against the edge of the case. The opposite end bears against a projection b^5 of the shackle. The force of the spring is exerted to swing the shackle around upon its pivot-pin b^6 and open the lock when the shackle is released from the numerous dogging-detents of the tumblers C D by the proper key.

It is evident that no amount of jarring or rough usage, even with the aid of a false key, skeleton key, or picking device, will disengage all of the shackle-dogging detents at one time, and unless they are all disengaged simultaneously the lock cannot be opened.

The form shown in Fig. 5 differs from the form shown in Figs. 1 and 2 principally in having one set of its tumblers D′ pivoted above the transverse diametrical center of the lock-case and the arrangement of the springs consequent upon such change.

The tumblers D′ have the same locking-detent d' and the same abutment d^2, only that the detent d' normally locks the shackle, while the arm d^2 dogs it from unlocking should any of the tumblers D′ be thrown too far, in which case the arm d^2 would be turned to a position against the offset b^4. The spring E′ throws the shackle open when released in this case as in the former, and the spring D^2 holds the tumblers in the locked position.

The tumblers, keys, and shackle of my lock may all be formed by stamping them out of sheet metal, and will require no finishing after the stamping operation is completed.

The key G, which I have shown, has an axial point g to enter a countersunk depression a in the back of the lock-case to center it while throwing the tumblers. It has also shoulders g to rest upon the top of the case and steady the key while being turned. It is evident that the common pintle-key may be used with my lock, if desired. In such case the back A′ would be perforated at the point a and the ordinary shouldered pintle riveted in place.

What I claim is—

The combination of the lock-case, the swinging shackle having double locking-detents at each end, two sets of independently-pivoted tumblers, the tumblers of each set having double locking-detents at their swinging ends so arranged that should a tumbler of either set be thrown beyond the point required to release one of its detents from its engaging-detent upon either end of the shackle its opposite detent will lock the opposite detent upon the shackle and prevent the opening of the lock, substantially as shown and described.

GEORGE D. SPIELMAN.

Witnesses:
GEO. J. MURRAY,
FRANK S. DAVIS.