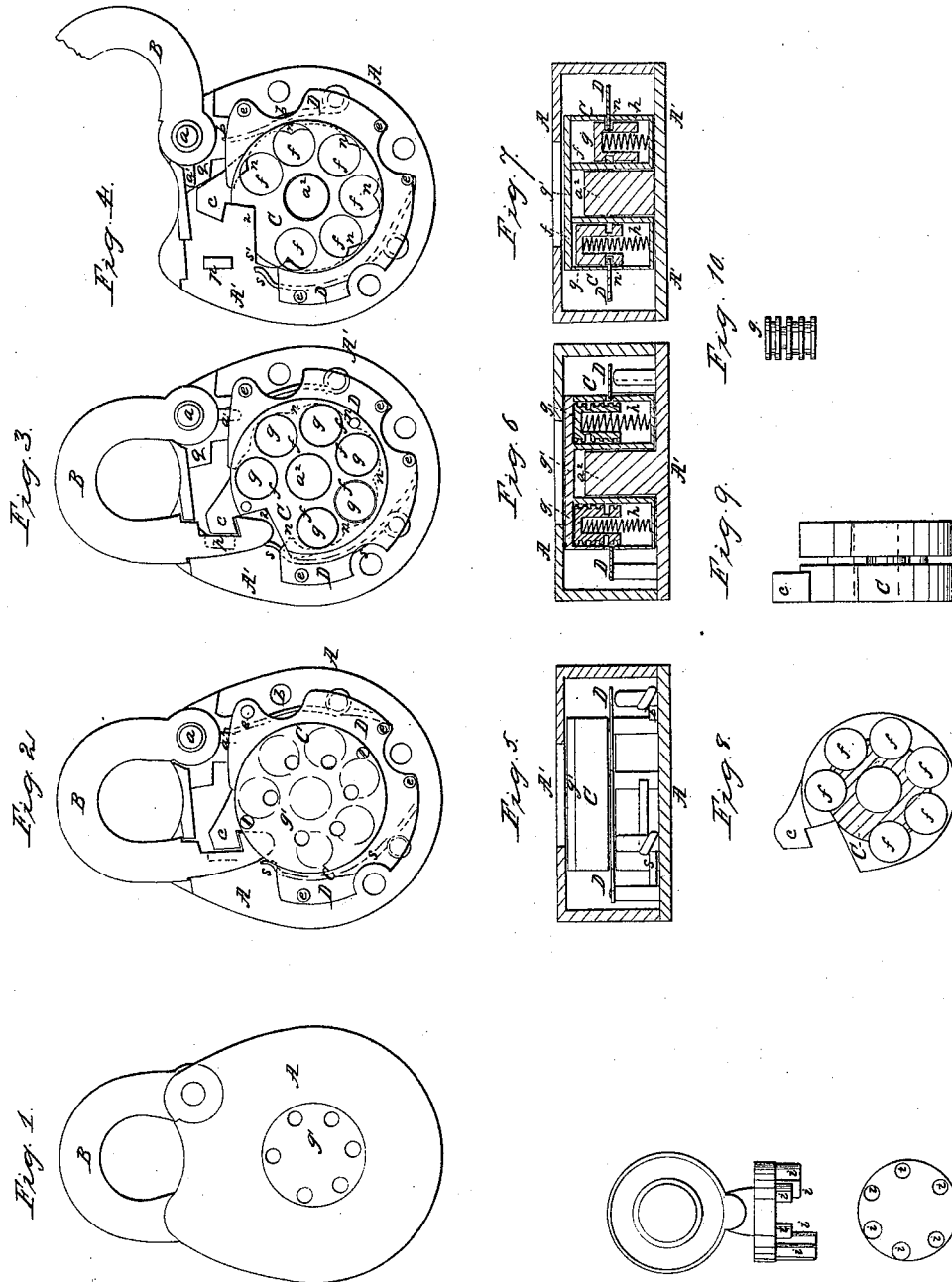


Bohannon & Johnson, *Padlock.*

N^o 55,048.

Patented May 29, 1866.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILSON BOHANNAN, OF NEW YORK, AND FRANK G. JOHNSON, OF
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IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 55,018, dated May 29, 1866.

To all whom it may concern:

Be it known that we, WILSON BOHANNAN, of the city, county, and State of New York, and FRANK G. JOHNSON, of Brooklyn, Kings county, State of New York, have invented a new and Improved Padlock; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a view of one side of the padlock. Fig. 2 is a view of the padlock having the outer shell removed. Fig. 3 is a view of the interior of the padlock with the outer case and the perforated face-plate removed. Fig. 4 is a view of the padlock having the case, perforated face-plate, and sliders removed, and showing the hasp open. Figs. 5, 6, and 7 are sections through the padlock. Fig. 8 is a section through the cylinder for receiving the sliders. Fig. 9 is an external view of this cylinder. Fig. 10 is a view of one of the sliders. Fig. 11 shows the key.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on the permutation-lock which was secured to Frank G. Johnson by Letters Patent bearing date February 5, 1861.

The main object of our invention is to inclose the sliding tumblers within a solid cylindrical case which is permanently attached to the back plate of the lock-case, for the purpose of affording a much stronger and cheaper lock than those having the tumblers applied to an open or skeleton case, as will be hereinafter described.

Another object of our invention is to attach the stationary guard-plate which receives the grooves in the tumblers, and also the movable tumbler-case, to the back plate of the lock-case, for the purpose of securing strength and preventing a displacement of the parts of the lock.

Another object of our invention is to so construct a padlock having a movable tumbler-case that it shall be self-locking, the hasp thereof being acted upon by a spring in such manner as to keep it open when unlocked and prevent it from being casually locked, as will be hereinafter described.

To enable others skilled in the art to under-

stand our invention, we will describe its construction and operation.

In the accompanying drawings, A A' represent the two parts constituting the case of the lock, and B represents the hasp of the lock, which is pivoted to a stud, *a*, projecting from one corner of the back plate, A', of the case. This hasp is constructed with a rounded nose and a notch, 1, on its free end, and a projecting lip, *a'*, on its pivoted end, which projection is acted upon by a spring, *b*, that throws the hasp open when the bolt-hook *c* releases the nose of this hasp, and keeps it open until forcibly pressed into its place by the hand.

The back plate, A', is constructed with a central stud, *a*², which is intended to receive and serve as a pivot for the cylindrical tumbler-case C, the circumference of which is concentric to the axis of said stud, as shown in Figs. 2, 3, and 4. This back plate, A', is also provided with a number of fixed studs, *e e e*, to which a guard-plate, D, is riveted, as will be further described.

The tumbler-case C is constructed with a number of concentric depressions, *f f*, in its face, which are of sufficient depth to receive within them the cylindrical tumblers *g g g* and their respective springs *h h h*. Any desirable number of these cups or tumbler-cells may be made in the case C, and we prefer to make them circular, so that the cylindrical tumblers shall be free to rotate as well as to move in the direction of their length. The tumblers are somewhat shorter than the cells within which they are placed, and these tumblers are constructed in the form of cups, and with false and true annular grooves, as shown in Figs. 6 and 10. The only difference between the false and true grooves is that the true grooves are deeper than the false, and when brought in a plane with the inner edge of the guard-plate D will admit of the case C being turned so as to lock or unlock the hasp.

The tumbler-springs *h h h* enter the depressions in the tumblers, and press the upper closed ends thereof against the bottom of the circular cap *g'*, which is secured by means of screws over the end of the case C, as shown in Figs. 2, 6, and 7. This cap *g'* is perforated, as shown in Figs. 1 and 2, for the purpose of receiving the pins *i i i*, which project from the key-handle, as shown in Fig. 11, and which

depress the tumblers and bring all the true grooves in a plane with the edge of the guard-plate D, so as to allow the case C to be moved either toward the right or left, as may be required.

The inner edge of the guard-plate D is scalloped, as shown in Figs. 3 and 4, so as to form projections or guards *n n n*, that enter a groove in the circumference of case C, so as to project within each one of the cells *f f*, and catch the tumblers *g g* when the attempt is made to pick the lock.

It will be noticed from the drawings, Fig. 3, that when the lock is fully locked (and the same is the case when it is fully unlocked) the projections *n n n* do not interlock with the grooves of the tumblers, and therefore the tumblers can be forced into their cells by the key. The projections *n n n* only stand in the way of a burglar who attempts to pick the lock. They are long enough to prevent the case C being turned when they are on a plane with any of the false grooves, but not long enough to do so when the true grooves are all on a plane with them or the guard-plate D.

When the hasp B is unlocked, as shown in Fig. 4, the guards *n n n* will receive and retain their respective tumblers *g g g* in a depressed position, as shown in Fig. 7, but when the hasp is locked the guards *n n n* will release all the tumblers and allow their springs to thrust them up against the cap, as shown in Fig. 6.

The difficulty in picking a lock of this description arises from the fact that the true grooves in the tumblers are made at different points from the ends thereof, and as all these grooves must be brought in a plane with the edge of the guard-plate D before the case C can be moved, it will require a key which is especially adapted to the arrangement of the said true grooves to unlock the hasp.

The hooked bolt-lock *c*, which is formed on the circumference of the case C, is adapted for catching and holding the hasp B, as shown in Figs. 2 and 3. This hooked bolt *c* is moved between two stops, *p q*, which limit the length of movement of the case C. Directly beneath the hooked nose of the bolt *c* a notch, 2, is cut in the circumference of the case C, for the purpose of allowing the hooked nose of the hasp B to be brought under the hook of said bolt; also for the purpose of allowing the case C to be moved by the pressure of the nose of the hasp upon it, so as to effect the locking of this hasp without the necessity of using a key. The notch 1 of the hasp is longer than the depth of the lock-catch *c*. It is also longer than the depth of the notch 2. A slight inclination from a horizontal line is given to the top and bottom of the notch 2.

The case C is acted upon by a spring, *s*, at *s'*, for the purpose of preventing it from moving too freely when the hasp is unlocked. This spring also keeps the case C in the position shown in Fig. 4, when the hasp is unlocked, and therefore the hooked nose of the hasp can be entered into the lock-case and made to bear

against the base of the notch 2 of the case until the case C is turned sufficiently to insure the entrance of the catch-bolt *c* into the notch 1 of the hasp. Thus the use of the key is unnecessary in locking the lock. We do not regard the broad idea of operating the catch-bolt by the hasp new; but we think it is a new invention to adapt a cylindric tumbler-case to be thus operated.

It will be seen from the above description that the tumblers *g g g*, together with their springs *h h*, are confined within a case, C, which is made of one piece of metal, and which is held in place upon the back plate, A', of the lock-case by means of the fixed guard-plate D, the inner edge of which enters a groove in said case. By this means a very strong lock is made and the tumblers cannot get out of order. The inclined plane, which is formed by notching the case C just below the hooked bolt *c*, affords a means for locking the hasp by pressing it upon the case C, and the spring *b*, which acts upon the lip A' of the hasp, throws this hasp open when it is released from the bolt *c*.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. Inclosing the grooved tumblers *g g*, together with their springs *h h*, within cells which are formed in the movable case C, constructed substantially as described.
2. The construction of the celled case C with a hooked bolt, *c*, a groove for receiving the guard-plate D, and a notch for receiving the nose of the hasp B, substantially as described.
3. The movable cap *g*, in combination with the case C, constructed for receiving the tumblers *g g*, substantially as described.
4. The combination of the guard-plate D and movable tumbler-case C, all constructed and arranged substantially as described.
5. The combination of the notched cylindric case C² with the hasp B', the said parts being constructed and operating substantially as described, and for the purpose set forth.
6. The means, substantially as herein described and shown, for throwing the hasp open when it is unlocked, in combination with the tumbler-case C, constructed and arranged substantially as described.
7. The combination of the friction-spring *s* with the movable tumbler-case C, for preventing this case from moving too freely when the hasp is unlocked, substantially as described.
8. The construction of the tumblers with depressions in them, for receiving and keeping in place the springs *h h*, substantially as described.

Witness our hands, in the matter of our application for a patent on new and useful improvements in the construction of locks, this 16th day of November, 1865.

WILSON BOHANNAN.
FRANK G. JOHNSON.

Witnesses:

R. WYMAN,
N. HEIMAN.