

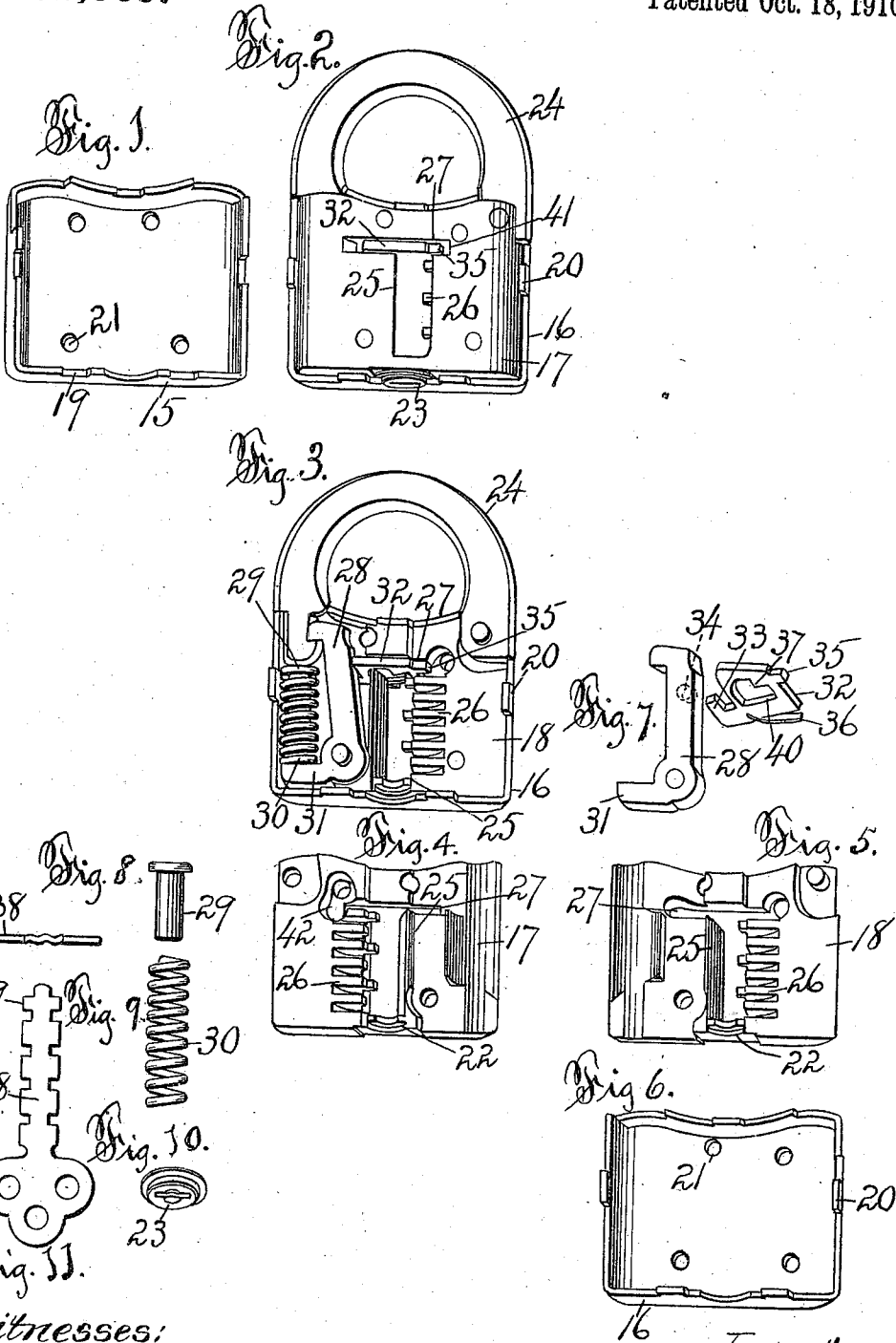
C. E. JOHNSON.

LOCK.

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972,865.

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UNITED STATES PATENT OFFICE.

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LOCK.

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To all whom it may concern:

Be it known that I, CHARLES E. JOHNSON, a citizen of the United States, and a resident of New Britain, in the county of Hartford and State of Connecticut, have invented a new and Improved Lock, of which the following is a specification.

My invention relates more especially to that class of locks known as padlocks, and the object of the invention, generally speaking, is to provide a lock having numerous novel features of advantage and utility.

One form of device embodying my invention and in the use of which the objects above generally set out together with various objects may be attained is illustrated in the accompanying drawings, in which all of the views with the exception of Figures 11 and 12 are perspective views,—Fig. 1 illustrating one section of the lock case; Fig. 2 illustrating the other section of the lock case together with the balance of the lock structure; Fig. 3 illustrating the other section of the lock case in which the other section of the container and the lock mechanism is located; Fig. 4 illustrating one section of the container; Fig. 5 illustrating the other section of the container; Fig. 6 illustrating the other section of the case; Fig. 7 illustrating the bolt and actuator; Fig. 8 illustrating the opener pin; Fig. 9 illustrating the opener spring; Fig. 10 illustrating the key center, and Fig. 11 illustrating the key.

Heretofore a common construction of locks of this class embodied a case formed as by casting, to which case the parts composing the lock mechanism were directly secured. The present invention differs from such prior structures in that a case or shell is provided which incloses a container to which the parts composing the lock mechanism are directly attached. This construction provides an extremely durable lock and one that may be readily formed for the reception of the operative parts of the mechanism.

In the accompanying drawings the numerals 15—16 indicate the sections of the lock case and 17—18 the sections of the container. The case sections are preferably struck up to proper shape from sheet metal in dies and having ends and sides to inclose the container, one section as 15 having recesses 19 for the reception of dowels or lugs 20 on the other section of the case. A part

of these recesses and the dowels to engage therein are formed on the side portions of the case sections, and a portion of said recesses and dowels on the ends of the case sections. This location and arrangement of the recesses and dowels on the sides and ends of the case effectually secures the sections against sliding movement one upon the other, the two sections being held from separation as by means of pins or like parts secured in holes 21 in the case. The container is formed as from a bar of metal of a shape in cross-section the same as that generally of the container when it is assembled in the case. A piece of proper length is cut from the bar and one end of this piece is shaped to fit the bow end of the case. The opposite end of the piece is bored and counterbored, forming a recess 22 for the reception of a key center 23. Holes are bored for the reception of the various pins for securing the case sections 15 and 16 together and also upon which to pivot the bow 24. A lengthwise opening is then formed through the base, constituting when the parts are assembled a key chamber one-half 25 of which is located in each section of the container, this opening being of a width equal to the distance between the ends of the wards 26 of the greatest length, and the opposite side of the opening. A crosswise opening is also formed through the piece at one end of the lengthwise opening, this crosswise opening, when the parts are assembled, constituting an actuator chamber one-half 27 of which is located in each section. The piece is then split lengthwise, as by a saw, forming two sections 17—18 of the container. The meeting faces of the two sections are now further cut to form recesses for the ends of the bow 24, a bolt 28 and an opener pin and spring 29 and 30 respectively. The wards 26 are formed as by means of a gang of saws, as primarily formed they being all of the same length and after formation such number as may be desired being broken off to the shorter length to fit any desired pattern of key.

The bolt 28 is pivotally mounted upon one of the pins which hold the sections against separation, one end of the bolt being formed to engage in the usual manner the end of the bow 24 to hold it closed and the opposite end of the bolt having a foot 31 upon which the opener spring 30 is seated, the opposite

end of the spring containing the opener pin 29, the head of which is in position to press against the end of the bow 24.

An actuator 32 is located in the actuator chamber 27, this actuator having a finger 33 engaging a recess 34 (see dotted lines Fig. 10) in the bolt 28. The actuator also has a lug 35 which by contact with the end of the actuator chamber serves to prevent backward movement of the actuator under certain conditions, and thus prevent operation of the lock other than by regular methods. A spring 36 is employed to hold the actuator at one limit of its play. A key opening is formed through this actuator, within which the bits of a key engage. This opening is formed with a shoulder 37. Upon opposite edges of the key 38 bits 39 are formed, preferably the same on each edge. In the operation of the device, as one of the end bits 39 engages with the bottom wall 40 of the key recess in the actuator, the actuator is moved, carrying the lug 35 out of line with the end 41 and into line with a recess 42 formed thereunder. When the actuator has reached this position the ward on the opposite edge of the key engages the shoulder 37, moving the actuator backward, this movement, by engagement of the finger 33 with the recess 34, swinging the bolt 28 on its pivot and disengaging it from the bow 24, allowing the latter to be forced outward by means of the opener pin and spring 29 and 30.

It will be noted that the actuator is placed loosely in the actuator chamber, that is, it is not held by pivots or other attaching means. The spring 36 holds the lug 35 opposite the end wall 41 of the actuator chamber, so that a key or similar article is required to locate the lug in such position that the actuator may be thrown back to operate the bolt. This prevents any unauthorized operation of the lock mechanism as by means of a sudden jar caused by rapping the lock on one edge to throw the actuator or by other means.

While I have shown and described herein one form and arrangement of mechanism for accomplishing the purpose desired, it will be understood that the invention is not limited to devices constructed in exact accordance with those herein shown, but that this arrangement and construction may be departed from to a greater or lesser extent without avoiding the invention.

While the container is described herein as formed from a bar of metal, I do not confine the invention to such construction, as the sections composing the container may be formed from metal cast to shape if this method of construction shall be deemed most expedient.

I claim—

1. A lock including a container formed in

sections having flat meeting surfaces with recesses opening depthwise from said meeting surfaces, said recesses being provided for lock mechanism, lock mechanism located within the container, and means for securing the sections of the container together.

2. A case formed to completely inclose a container, a container formed in sectional halves to completely fill the case and provide a support therefor at all points, said container having openings and recesses located at the meeting faces of the sectional halves, lock mechanism located within said openings and recesses, and means for holding the retainer in place.

3. A lock case formed to inclose a container, a container formed in sections having an unbroken outer surface resting against the entire inner surface of the case and fitting snugly therein and with a meeting surface between the sections forming a complete support for the sections one against the other with recesses located in the meeting surfaces of the sections, lock mechanism located within the container, and means for securing the container within the case.

4. A container for a lock including two sections having flat meeting surfaces, said sections having a key chamber and an actuator chamber and a bolt chamber formed at their meeting faces, and wards projecting from each of the sections into the key chamber.

5. A container for a lock including sections formed to closely fit each other, said sections having a key chamber located at their meeting faces, and a plural number of wards projecting into the key chamber from one section, the bottoms of the spaces between said wards being formed on the arc of a circle.

6. A lock including a case formed in sections, a container formed in sections to fill the case and provide a support therefor, said container having a key chamber, an actuator chamber and a bolt chamber formed at the meeting faces of the two sections with wards projecting into the key chamber, means for preventing separation of the case and container sections, an actuator located in the actuator chamber, a bow pivotally secured to the structure, and a bolt located in the bolt chamber and in operative engagement with said actuator.

7. A lock case, a bolt located within the case and arranged to secure a member of the lock mechanism, an actuator to hold said bolt, means for locking the actuator in an inoperative position, and means to be engaged by a key to move the actuator to an operative position and then move it to actuate the bolt.

8. A lock mechanism including a bolt arranged to hold a member of the lock mechanism within the case, an actuator chamber

having an end wall and a recess therein, an actuator in operative engagement with the bolt, said actuator being formed and arranged to engage the end of its chamber when the parts are in locked position, and means on the actuator for engagement of a key to initially move it from such position and then move it to operate the bolt.

9. A lock including container sections with recesses and openings for lock mechanism located at the meeting faces of said sections, a bolt located within the container, an actuator having a finger in engagement with the bolt and an opening to receive a key, said opening having a shoulder to engage a bit of said key to initially move the actuator, the end wall of the actuator chamber being constructed to prevent movement of the actuator in its initial position when the parts are locked and having a recess to receive the actuator in its movement from said initial position.

10. A case, a container composed of sections formed to fill said case and provide a support therefor, said sections having chambers located at their meeting faces in both of said sections, a bolt located in a recess formed in both sections, an actuator located in the actuator chamber and in operative engagement with said bolt, wards projecting into the key chamber, and a bow pivotally mounted on the structure and arranged to be engaged by said bolt.

11. A container for a lock including two sections of solid foundation, said sections having a key chamber, an actuating chamber and a bolt chamber located at their meeting faces, each chamber extending into both sections, a substantial portion of the meeting faces being located on the interior of the sections and the edges being substantially closed, and wards on each of the sections projecting into the key chamber.

12. A lock case, a bolt located within the case and arranged to hold a member of the lock mechanism within the case, an actuator bodily movable to release the bolt, means for locking the actuator in an inoperative position, and means to be engaged by a key to move the actuator to an operative position and then give it a different movement to actuate the bolt.

13. A lock case, a bolt located within the case and arranged to hold a member of the lock mechanism within the case, an actuator movable in two directions to release said bolt, means for locking the actuator in an inoperative position, and means to be engaged by a key to move the actuator first to an operative position and then give it a different movement to actuate the bolt.

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