

No. 676,823.

Patented June 18, 1901.

J. PAUR.  
LOCK.

(Application filed Apr. 15, 1901.)

(No Model.)

Fig. 1.

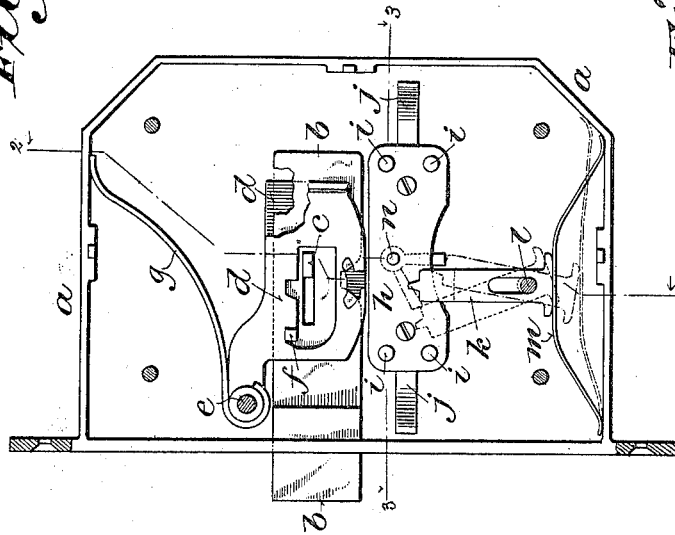


Fig. 2

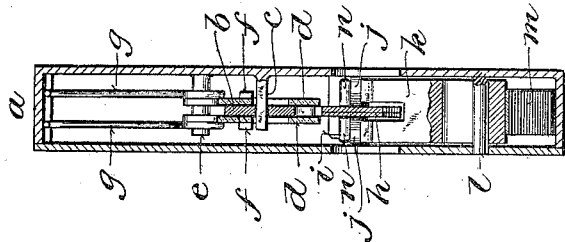
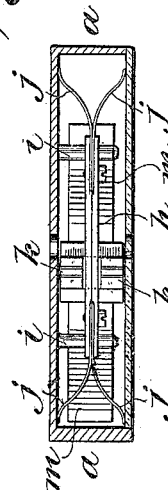


Fig. 3.



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# UNITED STATES PATENT OFFICE.

JOSEF PAUR, OF MILWAUKEE, WISCONSIN.

## LOCK.

SPECIFICATION forming part of Letters Patent No. 676,823, dated June 18, 1901.

Application filed April 15, 1901. Serial No. 55,851. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEF PAUR, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The main objects of my invention are to increase the security and protection afforded by common locks, and generally to improve the construction and operation of locks which are designed to be operated by removable keys.

It consists in certain novel features in the construction and arrangement of parts and in the combination of parts hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a side view of a lock embodying my invention, the cover of the lock-case being removed and the lock being viewed from the left with reference to Fig. 2. Fig. 2 is a vertical section on the line 2 2, Fig. 1; and Fig. 3 is a horizontal section on the line 3 3, Fig. 1.

For the purpose of illustration I have shown my invention as embodied in a door-lock; but it is applicable with little or no modification to locks of various kinds and for various purposes, such as padlocks, trunk-locks, &c.

*a* is the lock-case, which may be made of any convenient size and shape and of any suitable material, according to the purpose for which the lock is to be used.

*b* is the bolt, which is guided within the case *a* by a post *c*, attached to the back of the case and projecting therefrom through a longitudinal slot in the shank of the bolt.

*d d* are tumblers pivoted upon a cross pin or post *e* in the lock-case and extending therefrom on opposite sides of the shank of the bolt. They are formed with notches which are arranged to engage with lugs *f* on opposite sides of the bolt and to hold it in extended or retracted position. *g g* are springs tending to hold the notches in the wards in engagement with the lugs *f*. These tumblers

may be variously shaped, and one or more of them may be provided on each side of the bolt. The shank of the bolt *b* is notched adjacent to the keyhole in the lock-case for engagement with the bit of the key, and the tumblers *d* extend normally over the notch in the bolt and toward the keyhole, as shown in Fig. 1, so that when the key is turned in either direction to operate the bolt it will first force the tumblers out of engagement with the lugs *f*.

To prevent the operation of the lock by any one unfamiliar with its construction, a plate or partition *h* is provided between the keyholes in the opposite sides of the case. This partition is loosely mounted and movable laterally from one side of the case to the other upon cross pins or posts *i*, attached to the back of the case. Springs *j j* tend to move this partition or plate into a position midway between the opposite keyholes and to hold it in that position. For this purpose the plate may be conveniently made in two parts and diverging leaf-springs clamped between them, so as to bear against opposite sides of the case, as shown in Fig. 3.

*k* is a locking-block forked at one end to receive the plate *h* and hold it in a central position. It is pivoted and guided upon a pin *l*, passing transversely through a longitudinal slot therein and attached to one side of the case. The end of said block next to the pivot-pin *l* is extended and bears against a bow-spring *m*, the ends of which rest on the bottom of the case, as shown in Fig. 1. The forked ends of this block are notched or formed with shoulders on both sides to engage with the bit of the key, as hereinafter explained.

The plate *h* is preferably provided on opposite sides with pins *n n* in line with the eyes of the keyholes for the key to turn upon.

The lock hereinbefore described operates as follows: The several parts being in the positions in which they are shown in Fig. 1, the key is inserted from either side against the plate *h*, which is held in its middle position by the block *k* and which in that position prevents the operation of the bolt and tumblers by the key. The bit of the key is now turned against the block *k*, which is swung to one side, as indicated by dotted lines on Fig. 1, until the end of the bit drops

into or engages with the adjacent notch or shoulder in said block. This is indicated by a click to a person who understands the operation of the lock. The key is then turned back  
 5 in engagement with said notch or shoulder, carrying the block *k* against the tension of the spring *m* out of engagement with the plate *h*, as also indicated by dotted lines on Fig. 1. When the bit of the key is brought back ap-  
 10 proximately opposite the slot of the keyhole and the block *k* is disengaged from the plate *h*, the key is thrust farther into the lock, carrying the plate *h* against the opposite side of the case. In this position the key is turned  
 15 in the direction required to shift the bolt *b* and will by the engagement of its bit with the tumblers and the notch in the shank of said bolt disengage the tumblers from the lugs *f* and operate the bolt in the usual way.  
 20 As the parts are shown in Fig. 1, the key after insertion in the lock would first be turned to the right far enough to engage with a notch in the end of the block *k*, then turned back to the left far enough to release the plate *h*,  
 25 then thrust farther into the lock, and finally turned to the right far enough to work the tumblers and retract the bolt. When the key is removed from the lock, the spring *j* will return the plate *h* to its middle position,  
 30 and the block *k* will be returned by the spring *m* to its original position in engagement with said plate, as shown by full lines in Fig. 1. If after the key is inserted in the lock from either side and turned in either direction into  
 35 engagement with the adjacent notch or shoulder of the block *k* it is turned beyond that position in the same direction, the plate *h* will not be released by the locking-block *k*, and the tumblers and bolt cannot be operated  
 40 by the key. Thus greater protection and security are afforded.

In case the lock is applied to a door or is designed to be operated for any purpose from either side the plate *h* serves as a guard when  
 45 the bolt is projected and the key is left in the lock on one side to prevent the withdrawal of the bolt by a key or other instrument inserted from the opposite side. For this purpose after the bolt is projected the bit of the key  
 50 may be turned into engagement with a notch or shoulder of the block *k*, and thus held out of line with the keyhole-slot, so that it cannot be thrust out of the lock by pressure applied to the opposite side of the plate *h*.

55 For additional security locks constructed in accordance with my invention may and preferably will be provided with wards of varying number, shape, and arrangement, provided with keys of different shapes.

60 Various changes in the details of construction and arrangement of parts may be made without departing from the principle and intended scope of my invention.

I claim—

65 1. In a lock the combination with the bolt,

of a plate movable transversely to the bolt, a spring tending to move said plate into a position to prevent the operation of the bolt by a key, a locking-block for holding said plate  
 70 in said position, and a spring tending to hold said block in engagement with said plate, said block being adapted to be engaged and thrown by the manipulation of the key out of engagement with said plate, substantially as described. 75

2. In a lock the combination with the bolt, of a guard-plate movable transversely to the bolt, springs tending to hold said plate in a middle position in which it prevents the operation of the bolt by a key, a locking-block  
 80 adapted to hold said plate in its middle position and to be moved by the key of the lock out of engagement with said plate, and a spring tending to hold said block in locking position, substantially as described. 85

3. In a lock the combination with the case and bolt, of a laterally-movable plate between the keyholes, springs tending to hold said plate in a middle position in which it prevents the operation of the bolt by a key, a  
 90 forked locking-block for holding said plate in its middle position, pivoted and movable endwise upon a transverse pin in said case and provided with notches or shoulders for engagement with the key-bit, and a spring  
 95 tending to return said block into and hold it in locking position, substantially as described.

4. In a lock the combination with the case and bolt, of tumblers arranged on opposite sides of the bolt and adapted to hold the same  
 100 in its different positions, a laterally-movable plate adapted in a middle position to prevent the operation of the bolt and tumblers by a key, springs tending to move said plate into its middle position, a locking-block adapted  
 105 in its normal position to hold said plate in its middle position, and means tending to hold said locking-block in its normal position, substantially as described.

5. In a lock the combination with the case, bolt and tumblers, of a laterally-movable plate adapted when held in a middle position to prevent the operation of the bolt and tumblers by a key, springs adapted to move said plate when it is free into its middle position,  
 115 a locking-block forked to embrace said plate and hold it in its middle position and pivoted and movable endwise on a transverse pin in said case, and a bow-spring pressing against one end of said block and tending to hold it  
 120 in its normal position in engagement with said plate, said block being notched in its forked end on both sides for engagement with the key-bit, substantially as described.

In witness whereof I hereto affix my signature in presence of two witnesses. 125

JOSEF PAUR.

Witnesses:

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 ALBERT J. HART.