

H. H. Baker,

Sheet 1-2 Sheets.

Lock,

No. 45,014,

Patented Nov. 15, 1864.

Fig. 1

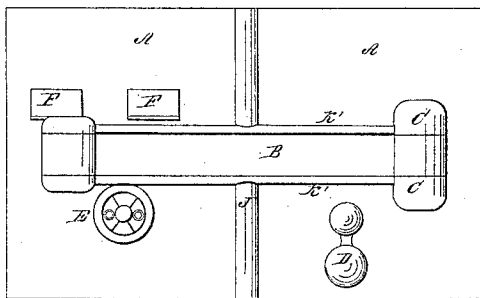


Fig. 2

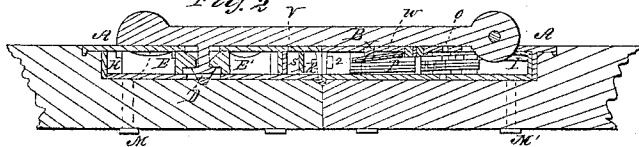


Fig. 3

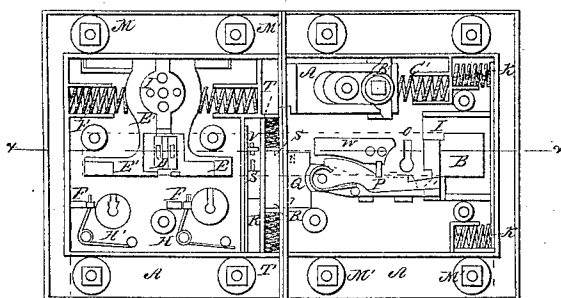


Fig. 5

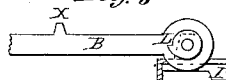


Fig. 6

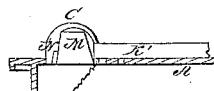


Fig. 4

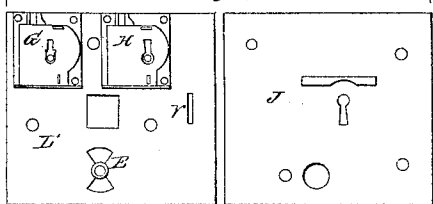
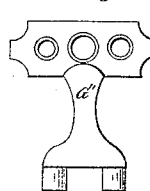


Fig. 7



Fig. 8



Witnesses;
Chas. C. Wood,
James H. Graham.

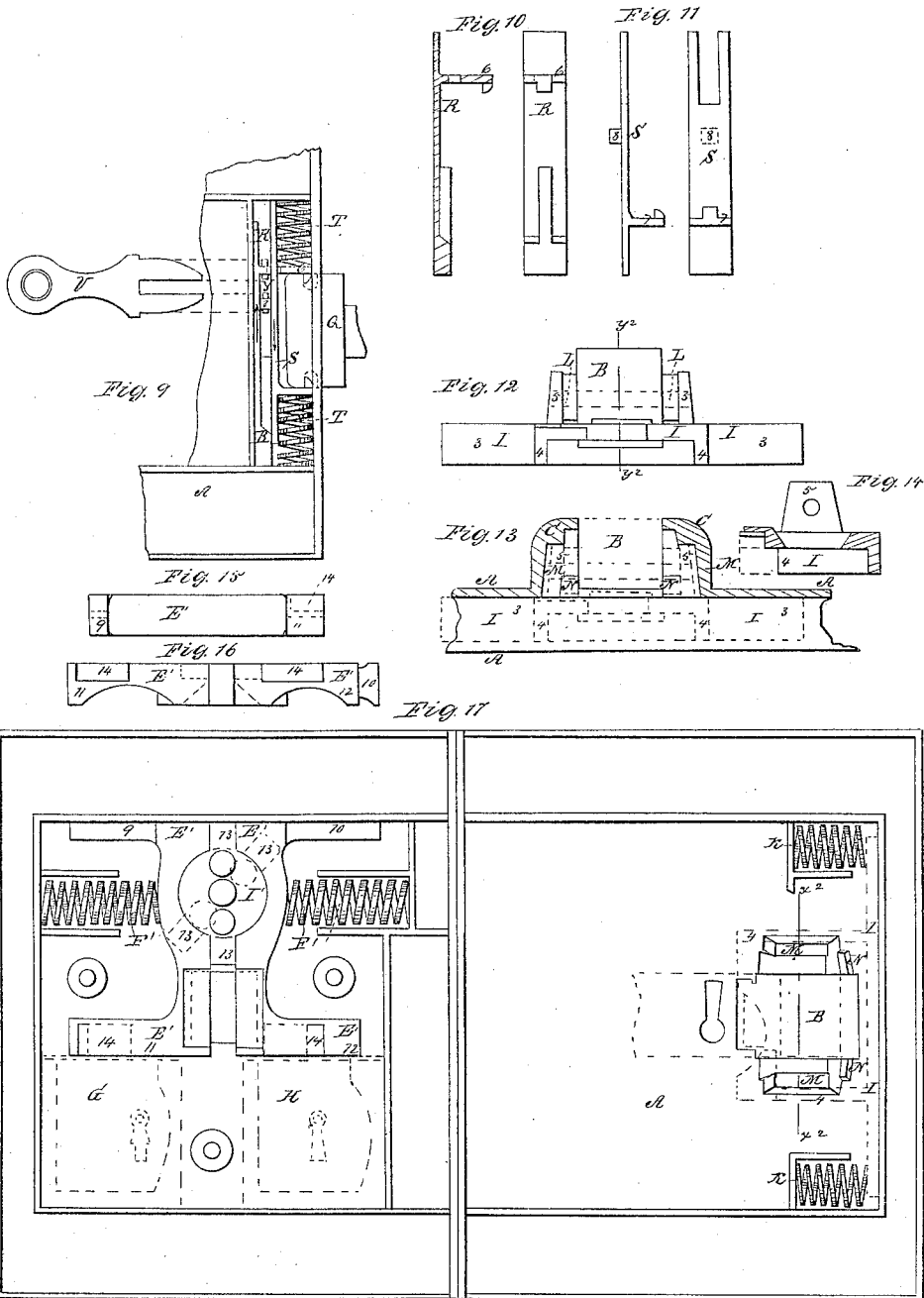
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att'y

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James P. Graham

Inventor:
H. H. Baker
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UNITED STATES PATENT OFFICE.

HALSEY H. BAKER, OF NEW MARKET, NEW JERSEY.

IMPROVEMENT IN LOCKS.

Specification forming part of Letters Patent No. 45,014, dated November 15, 1864.

To all whom it may concern:

Be it known that I, HALSEY H. BAKER, of New Market, in the county of Middlesex and State of New Jersey, have invented certain Improvements in Locks, of which the following is a specification.

My invention relates to the combination and arrangement of the parts of a lock by means of which great security is obtained, and at the same time the lock can be manufactured and sold for a comparatively small amount, and by which there is also obtained greater convenience and utility in management. Said lock is designed to be applied to either swinging or sliding doors, such as barn-doors, car-doors, &c., a device being applied to compensate for any shrinking or swelling of said doors, as hereinafter more fully described.

Figure 1 is a front view of lock. Fig. 2 is a longitudinal section through the line $x\ x$. Fig. 3 is a view of the lock inverted, the caps which cover the works being removed. Fig. 4 is a view of the caps which cover the lock, said caps being inverted to show their under parts. Fig. 5 is a side view of the hinged end of the bar with a section of a segment of the plate to which said bar is hinged. Fig. 6 is a section of a segment of the lock-plate, showing the projection and recesses for the reception of the hinge, compensating device, &c. Figs. 7 and 8 are views of keys for different parts of the lock. Fig. 9 is a detail view of the bars and catches R and S and the bolt Q. Fig. 10 is an edge and side view of the bar and catch R. Fig. 11 is an edge and side view of the bar and catch S. Fig. 12 is an edge view of the plate or frame I, and the end of the bar B hinged to said plate or frame I, the bar being turned back. Fig. 13 is a section of a segment of the lock-plate A through the line $x^2\ x^2$ in Fig. 17, showing in red lines the relation of the parts represented in Fig. 12 thereto. Fig. 14 is a cross-section of the plate or frame I, showing the parts to the left of the line $y^2\ y^2$, Fig. 12, the bar B being removed. Fig. 15 is an edge view of one of the catches E'. Fig. 16 is an end view of the two catches E'. Fig. 17 is a detail view showing the position of the tumbler I', the catches E' E', and the small locks G and H, with respect to each other and to the lock-plate A, and also, in red lines, the position

of the plate or frame I with respect to the lock-plate A:

A are the lock-plates. B is the bar. C is a projection on the lock-plate for the reception of the hinge, compensating device, &c. D is a handle or knob for operating the spring-catch to hold the door closed, as in ordinary locks, when the lock is attached to swinging doors. E is the key-hole for unlocking the bar. F are sliding covers for the key-holes of the small locks G and H. The plate I, to which the bar B is hinged, is a small plate or frame having projecting arms 3 and flanges 4 on one side, and on the other side projections or ears 5 extending into the recesses M of the projection E of the lock-plate A. The flanges 4 extend to but do not press against the cap J when said cap is in its place, so as to allow the plate or frame I to have a sliding motion along the inner surface of the lock-plate A, but no motion in a direction perpendicular to said plate A. There is also a square hole or opening through said plate or frame I, the front and back sides of which hole or opening are inclined to accommodate the enlarged end of the bar B when said bar is hinged to the projections or ears 5. The side of the plate or frame I which rests against the side of the lock is extended into arms 3, and the plate or frame I is kept in position against the side of the lock by the action of coiled-wire springs K, pressing against the said arms 3, except when forced back by the action of parts hereinafter described.

Upon the sides of the enlarged end of the bar B, which is hinged to the projections or ears 5, is formed cams L, one of which is represented in Fig. 5. When the bar is thrown back into the position represented in Fig. 5, the cam L, acting upon the side of the recess M, presses back the springs K until the shoulder or catch of the cam reaches the shoulder N of the recess M, into which it is forced by the action of the springs K, and the bar is held back against the side of the door, from which position it is released by pressing back the bar till the shoulder of the cam L is freed from the shoulder N, when the bar can be swung shut and locked. The projections of the plate I, to which the bar B is hinged, represented in dotted lines in Fig. 5, are made narrower than the recess M, designed to re-

ceive them, so that the hinge and bar may move forward or back first, to allow the cam L to act as above described, and, second, to compensate for the shrinking or swelling of the door without at all weakening or interfering with the strength or efficiency of the lock.

O is the key-hole, P the tumblers, and Q the bolt of an ordinary tumbler-lock, designed to be used when greater security is required. R and S are two sliding bars and catches. The bar R is provided with an arm, 6, which carries the catch, and against which the key acts in operating the bar. Said arm 6 is notched above and below, so as to fit into a slit or channel in the bar S. Said notches serve as a guide to the bar S as the bars slide forward and back upon each other. The lower end of said bar R is thickened to keep the bars parallel as they are operated. The bar S is also provided with an arm, 7, which carries a catch. The upper part of said bar is slit or channeled, so as to fit the notched part of the arm 6. It is also furnished with a projection, 8, for the key to act upon in operating the bar.

When the bolt Q is thrown forward by the operation of the key, the bolt Q presses against the inclined sides of the catches, which are attached to and form a part of the slide-bars R and S until said catches reach the cavities 1 and 2 hollowed out in the sides of the bolt for their reception. Then by the action of the coiled-wire springs T the catches are forced into the cavities, and when there no action of the key is able to force back the bolt, the only effect of such action being to force the shoulders of the catches against the solid partition of the lock. But when the catches are forced back by the action of the key U through the key-hole V, upon projections or pins on the bars R and S, or directly upon said bars, then while the catches are thus held back the bolt Q can be operated by the key. The key-holes O and V are both covered by the bar B when said bar is shut.

W is a spring designed to throw out the bar when said bar has been unlocked, the projection x of the bar B passing through a hole in the lock-plate and pressing down the spring W when the bar is shut, as represented in Fig. 2; but the bar being unlocked the elasticity of the spring W throws out the bar, which may then be swung back against the door, where it is held by the operation of the cam L, as before described.

A' B' C' are the parts of an ordinary sliding spring-catch, which may be used when the lock is attached to a swinging door, but may be dispensed with or operated differently when the lock is attached to a sliding door.

E E are catches, which are furnished with arms 9 10 11 12. The object of the arms 9 and 10 and one of the objects of the arms 11 and 12 are to compel the catches to move in a direct line when operated by the tumbler I' and the springs F'. The catches E' E' are

notched on both upper and lower sides, as represented by dotted lines in Fig. 16, the notches on one side having square bottoms to take hold of the shoulders of the projection D' of the bar B. On the other side the notches have inclined bottoms to allow the catches E' E' to be moved back by the inclined end of the projection D' pressing against the inclined bottoms of said notches. The arms 11 and 12 also have notches 14 to receive the bolts of the small locks G and H.

I' is a double-acting tumbler, which is furnished with arms 13, which said arms, when the tumbler I' is turned by the key G', force back the catches E' E' in opposite directions and frees the projection D' from the grasp of the said catches.

When the bar B is closed, the projection D', striking against the inclined edges of the catches E', forces them apart by compressing the coiled-wire springs F' until the shoulders of said projection have passed beyond said catches. Then the elasticity of the springs throws the catches forward and holds the bar securely until the catches are moved back by the action of the key G' upon the double-acting tumbler I'. If still greater security is required, the small locks G and H (one or both) may be employed, the bolts of which shut into cavities 14, prepared in the catches E' for their reception. Said locks G and H may be ordinary locks, or locks of more intricate workmanship, as required. They are attached inverted to the cap L' and rest upon the short posts, which form the fulcrums of the springs H', keeping said springs in place, and at the same time leaving a space between the locks and the lock-plate A, so that when the keys enter the key-holes in the lock-plate they must be turned half-round before they can enter the key-holes proper of the small locks, thus rendering them very difficult or impossible to be picked, as the form of said key-holes cannot be seen from the outside; and, further, from the position of said locks G and H any pressure applied to the tumbler I' to unlock the bar B forces, or has a tendency to force, the catches E' E' against the edges of the bolts of the small locks G and H, which bolts are supported by the sides of the small locks resting against the solid sides or flanges of the lock-plate A, as represented in Fig. 17, thus enabling them to resist an immense pressure when thus applied.

H' are springs for sliding the covers F into their places when the keys have been withdrawn from the key-holes.

The lock-plate is formed with a projecting flange, J', on one part to overlap the edge of the other part, which, in connection with the bar, obviates the necessity of any bolts, up-rights, or cross-bars to keep the doors in line, and at the same time prevents access to the bar to disturb or injure it through the aperture between the doors. Said plates have flanges K' on each side of the bar to act as guides to the bar in shutting and also to afford additional support.

The lock is attached to the door by bolts M', the heads of which are cast in projections on the inner side of the lock-plate, thus rendering it impossible to reach their heads from the outside of the lock to cut them off and remove the lock.

When only ordinary protection is required, the bar and its adjuncts only may be used; or the bar and its adjuncts and the small locks G and H, one or both, may be used; or the bar and the lock P Q and their adjuncts may be used; or all the parts, as the purposes for which the lock is required may render necessary.

I claim—

1. The combination of the bar B with the catches E' and the double-acting tumbler I', substantially as and for the purpose set forth.
2. The combination of the bar B and cam L

with the recesses M and N of the projection C, substantially as and for the purpose set forth.

3. The combination of the plate I and its projections with the recess M and the bar B, substantially as and for the purpose set forth.

4. The combination of the bolt Q and the catches R and S, substantially as and for the purpose set forth.

5. The combination of the small locks G and H, one or both, with the catches E', substantially as and for the purpose set forth.

6. The combination of the flanges J' and K' with the lock-plates A and the bar B, substantially as and for the purpose set forth.

H. H. BAKER.

Witnesses:

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JAMES T. GRAHAM.