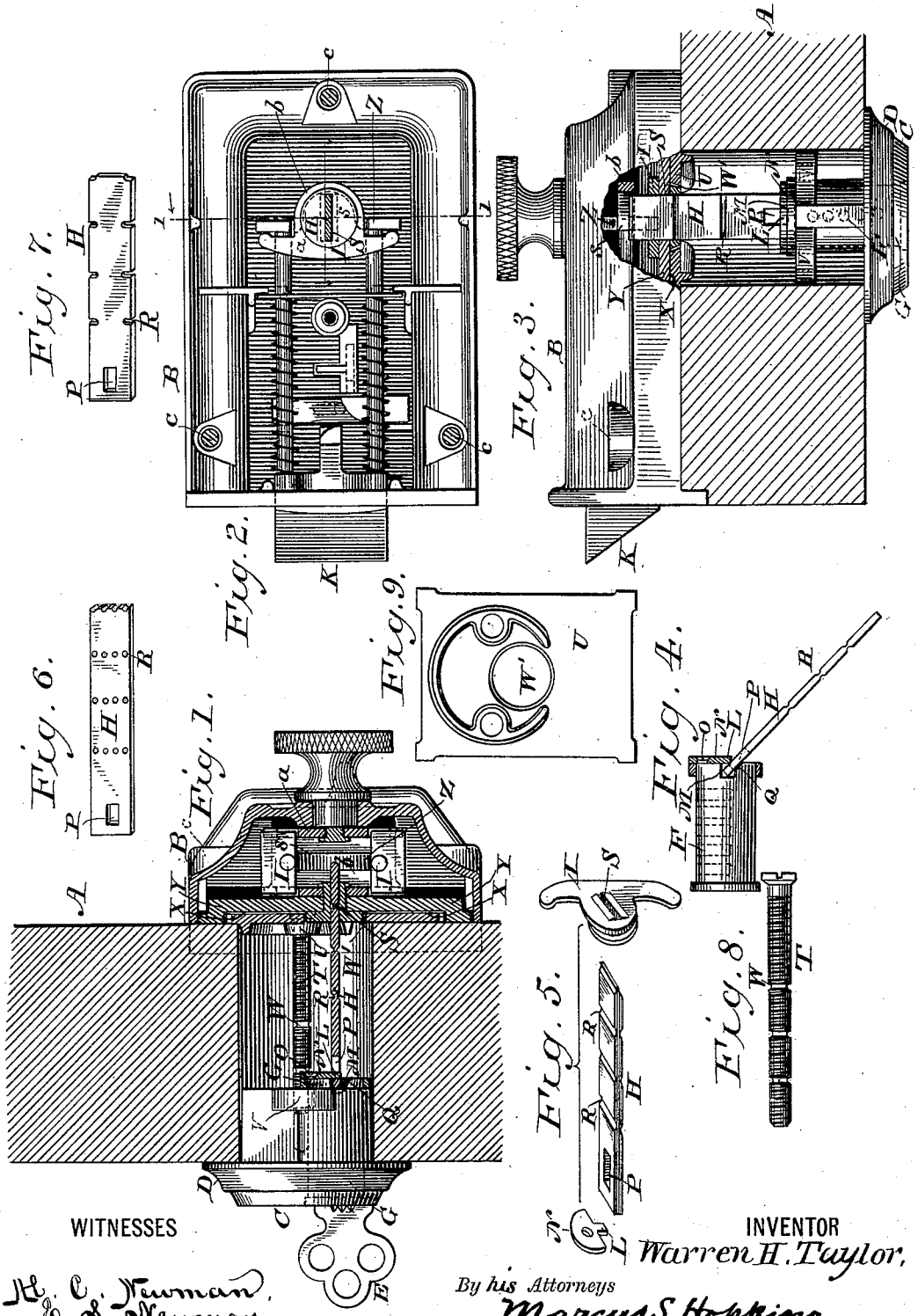
(No Model.) 2 Sheets—Sheet 1.

W. H. TAYLOR.

LOCK.

No. 405,057. Patented June 11, 1889.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

W. H. TAYLOR.

LOCK.

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Fig. 10.

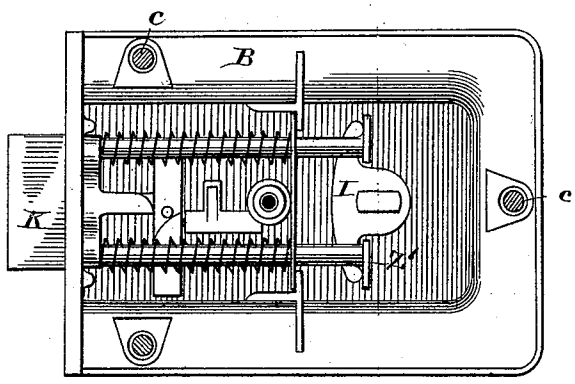


Fig. 11.

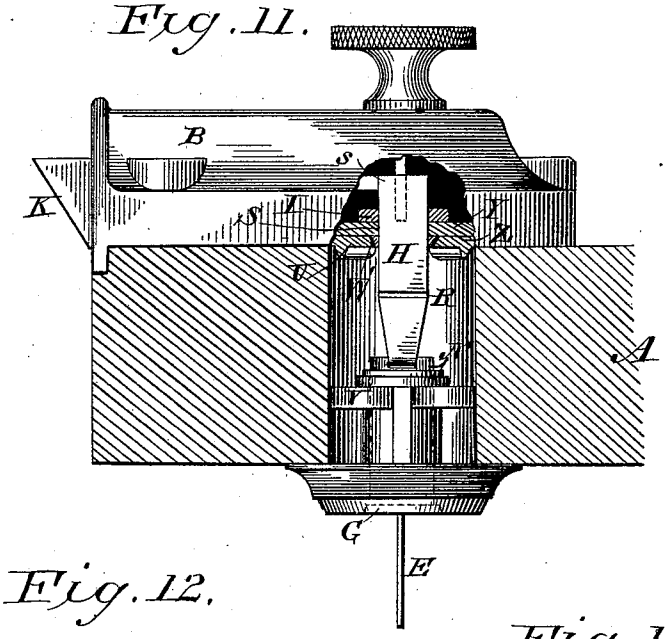


Fig. 12.

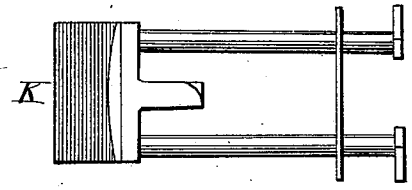
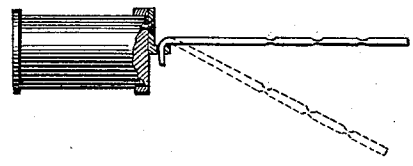


Fig. 13.



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UNITED STATES PATENT OFFICE.

WARREN H. TAYLOR, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF SAME PLACE.

LOCK.

SPECIFICATION forming part of Letters Patent No. 405,057, dated June 11, 1889.

Application filed December 15, 1888. Serial No. 293,740. (No model.)

To all whom it may concern:

Be it known that I, WARREN H. TAYLOR, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Locks, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to locks which have independent escutcheons or tumbler-cases that are applied on the outside of doors, &c., and are connected to the latch bolt-operating mechanism on the inside by a connecting-bar or similar device.

The general object of my improvements is to render such locks easier to be applied, and to make the adjustment and putting together of their parts by the mechanic in applying them to use more simple and exact, so that they will be sure to operate satisfactorily.

My invention consists in improvements in the construction and organization of the parts of such locks, as hereinafter set forth.

One of the difficulties heretofore encountered in adjusting the parts of this class of locks has been that the connecting-bar between the escutcheon and one of the roll-backs of the lock was placed loosely into a slot in the end of the key-hub of the escutcheon and into a corresponding slot in one of the roll-backs in the case of the lock, and there held only by being fitted approximately in length to the space between those two slots. Such fitting of the connecting-bar is not easily accomplished with accuracy by the tools and skill of ordinary mechanics.

To overcome the difficulties usually encountered in applying the parts of this class of locks to use, I have constructed my improved lock in such a manner, as described below, that no nice adjustments are required of the mechanic in putting together its parts, and at the same time I secure a more accurate fitting of the parts and a more satisfactory operation of the lock than has been practicable heretofore.

In the accompanying drawings, illustrating my improvements, Figure 1 shows a section of a door with my improvements applied. It also exhibits a section of a latch on the line 1 1 of Fig. 2. Fig. 2 is an inside view of latch mechanism, with the covering-plate removed. Fig. 3 is a horizontal section through the door, with parts of the latch broken away to show interior mechanism. Fig. 4 shows a key-hub and connecting-bar detached. Fig. 5 shows a connecting-bar and detached parts, with which it is joined when the lock is set up for use. Figs. 6 and 7 show a variety of forms of the connecting-bar. Fig. 8 shows a holding-screw detached. Fig. 9 shows the holding-plate detached. Fig. 10 is a view similar to Fig. 2, except the omission of a cross-head. Fig. 11 is a view similar to Fig. 3, except a formal modification in the means of joining the connecting-bar and the key-hub. Fig. 12 is a detached view of a latch-bolt and rods with connecting cross-head omitted. Fig. 13 is a view somewhat similar to Fig. 4, but showing a different method of joining the key-hub and connecting-bar.

Referring to the letters on the drawings, A indicates a part of a door to which my improved locking mechanism is applied; but of course it might be applied to other things besides doors.

B indicates the lock-case on the inside of the door, C the escutcheon or tumbler-case, and D the annular escutcheon plate or collar on the outside of the door.

E indicates the key to operate the tumblers F and the hub G of ordinary construction.

H indicates a connecting-bar to connect the hub and the roll-back I, which operates the spring latch or bolt K of usual construction. The key-hub is provided at its inner end with a pin or lug L, Figs. 1, 4, and 5, which projects across or partly across the slot M in the hub for receiving one end of the connecting-bar. A convenient way to form the lug L is to secure a plate N, having such a lug upon it on the inner end of the key-hub—as, for example, by means of a screw, O, Figs. 1 and 4; but it may be formed in any usual manner, the essential thing being that it serves the purpose to engage in a slot P, Fig. 4, in one end of the connecting-bar. In order to enable the slotted end of the connecting-bar to be inserted in the slot M of the key-hub, I

bevel the slot, as shown at Q, so that the connecting-bar can be inserted at an angle, as shown in Fig. 4, and then turned so as to be substantially in line with the key-hub, when the pin L will enter the slot P of the connecting-bar and latch it firmly in the slot M. In that way the connecting-bar can instantly be placed and secured in its slot in the key-hub, and the escutcheon, with one end of the connecting-bar hooked to it, can be put in position in a door, so that the connecting-bar will extend through it to engage with the roll-back of the latch or lock.

I usually make my connecting-bar of a length sufficient to extend through doors of maximum thickness, and in order to have it easily and quickly fitted to thinner doors I provide in it several transverse grooves R on opposite sides; or it may be notched or punched, as shown in Figs. 6 and 7, so that it can easily be cut or broken off in line with any one of these grooves, while it is not injuriously weakened. In that way a mechanic with ordinary tools can instantly regulate the length of the connecting-bar with sufficient nicety; but I do not depend alone upon merely breaking off the connecting-bar on the line of a particular groove for exact adjustment, because I provide a slot S in the roll-back I, which extends entirely through it, so that within variable limits, depending upon the thickness of the lock-case, the connecting-bar will be exactly adjusted without being cut off or broken off to a very exact-fitting length. All that is necessary is that the connecting-bar enter the slot S in the roll-back I, and whether it be a sixteenth of an inch or a quarter of an inch is immaterial. I have nothing to do, therefore, after attaching the slotted end of the connecting-bar to the hub in the manner described, and inserting the escutcheon and connecting-bar in place in a hole bored for the purpose as usual, but to snap off any considerable excess of length that may be found in the connecting-bar, and then place the lock-case in position, so that the opposite end of the connecting-bar will enter the slot S in the roll-back I, and the lock-case fit tightly the surface of the door. In this way a perfectly simple, convenient, and accurate fit of the parts will be quickly secured without the use of special tools and without liability of mistakes.

Another improvement I provide is in the escutcheon-holding screws T, which pass through a holding-plate U and enter the screw-holes V in the inner end of the escutcheon to hold it in place. Ordinarily, such holding-screws have had to be filed off by mechanics in applying this class of locks in order to adapt them to doors of varying thicknesses, more particularly where variations of thickness are considerable. In order to save that labor and enable a mechanic to quickly apply the holding-screws and adjust them to the proper length, I provide a series of annular grooves W in them, so that, while they are not injuriously weakened, they can be easily broken off by the use of a pair of pinchers, or a claw-hammer, for example, where the grooves occur. By this means perfect adjustment is instantly accomplished in every instance without particular care or skill beyond what are to be found in the most ordinary mechanic.

The escutcheon-holding plate U has a hole W′ through it for the passage of the connecting-bar H. This hole is small enough to prevent such tilting movement of the connecting-bar as might disengage it from the latching-pin L, and thus disconnect it from the key-hub. At the same time the hole is large enough to permit the workman to see the inner end of the escutcheon through it, so that he can readily enter the holding-screws T to place.

X indicates a recess or depression cast in the lock-plate Y to receive the plate U. This plate serves not only as a holding-plate for the escutcheon, but also as an adjusting-plate, because when the lock-case is placed over it, if the lock-case does not come exactly in the proper position in line with the edge of the door, a slight force exerted on the lock-case will adjust the plate U properly and at the same time correctly align the escutcheon.

In order to provide a clear space beyond the slot S within the lock-case for the end of the connecting-bar which enters the slot S, I provide a curved cross-head Z, Fig. 2, to be operated either by the roll-back I or the roll-back *a*, or I dispense with that and provide separate heads Z′, as shown in Fig. 10.

By means of the curve *b* of the cross-head, or by using separate heads, I leave an open space at *s*, Figs. 1, 3, and 11, in the interior of the lock beyond the slot S in the roll-back I, so that the end of the connecting-bar may enter the slot a greater or less distance, according to its length, and hence its length need not be nicely adjusted to the distance between the roll-back I and the inner end of the key-hub.

In Figs. 11 and 13 the connecting-bar is shown as hooking into a hole in the lug N. It is immaterial in practice whether the hole be in the connecting-bar or in the lug, the important thing being to provide a fastening which will hold the connecting-bar in place so that it cannot drop out, and yet so that it can be detached instantly at pleasure.

To apply my improved lock to a door, for example, it is necessary first to bore a hole in the proper place. Then the connecting-bar H should be latched to the key-hub and the escutcheon and bar inserted in the hole. The bar may have been previously broken off to approximately the proper length, or it can be snapped off by a pair of pinchers after insertion easily enough. Next, the holding-screws T should be clipped or broken to about the proper length and inserted through the plate U and screwed into the screw-holes V of the escutcheon far enough to clamp the escutcheon

snugly to place and leave the end of the connecting-bar projecting through the hole in the plate U. Then the lock-case, with its back plate secured to it, can be placed in position, the plate U entering the recess X in the back plate of the lock and the end of the connecting-bar entering the slot S in the roll-back I. Finally, the lock-holding screws *c* can be set in, and that is the whole work of adjusting and putting in place the parts of my improved lock.

Thus it will be seen that my improvements render a lock or latch of the class mentioned very easy of application to use, so that any one capable of measuring distances and boring a hole can speedily attach the lock to any place in which it is adapted to be used. All of the operations of putting the parts together can be accomplished by the use of sight, and nothing is to be done by feeling, as is usually the case.

The case containing the latch-bolt mechanism need not be taken apart, so that there is no danger of losing or misplacing any of the parts it contains. Thus great practical convenience and economy are secured by my improvements in the use of this class of escutcheon-locks.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with a tumbler-case or escutcheon for a lock, of a key-hub and a connecting-bar for connecting the hub operatively with a door-latch, the hub and connecting-bar being hooked together by means of a pin and pin-hole, substantially as set forth.

2. In a tumbler-case or escutcheon for a lock, a key-hub provided with a slot for receiving a connecting-bar and a lug or pin projecting over or within the lines of the slot and adapted to hook one end of the connecting-bar in place, substantially as set forth.

3. A connecting-bar for an escutcheon-lock provided with a hole in one end for hooking it to a key-hub, substantially as set forth.

4. A connecting-bar for a lock weakened transversely at intervals, so that it can be readily broken off for fitting it to place, substantially as set forth.

5. In an escutcheon-lock, an improved escutcheon-holding screw weakened at intervals, adapting it to be broken off, substantially as set forth.

6. In a lock, a roll-back I, provided with a slot extending entirely through it for receiving one end of a connecting-bar, substantially as set forth.

7. In a lock, the combination with the through-slotted roll-back, of the connecting-bar and key-hub, substantially as set forth.

8. In a lock, the combination, with a through-slotted roll-back, a connecting-bar, a key-hub, and two bolt-rods arranged so as to leave a space for the end of the connecting-bar, substantially as set forth.

In testimony of all which I have hereunto subscribed my name.

WARREN H. TAYLOR.

Witnesses:
SCHUYLER MERRITT,
HOWARD L. UNDERHILL.