

(Model.)

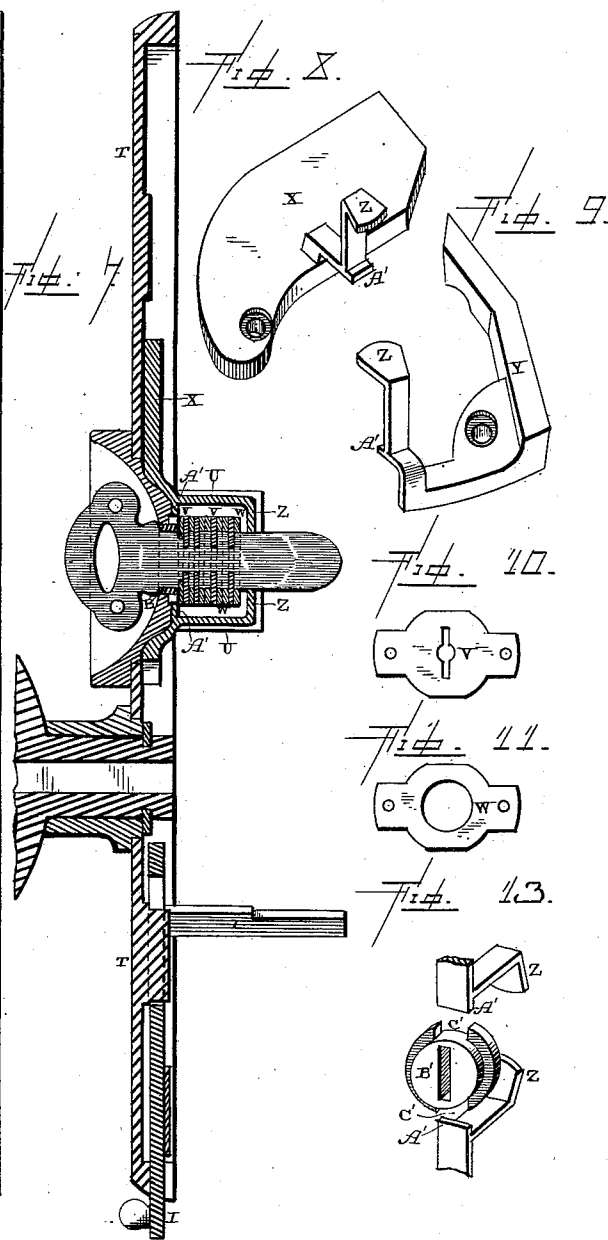
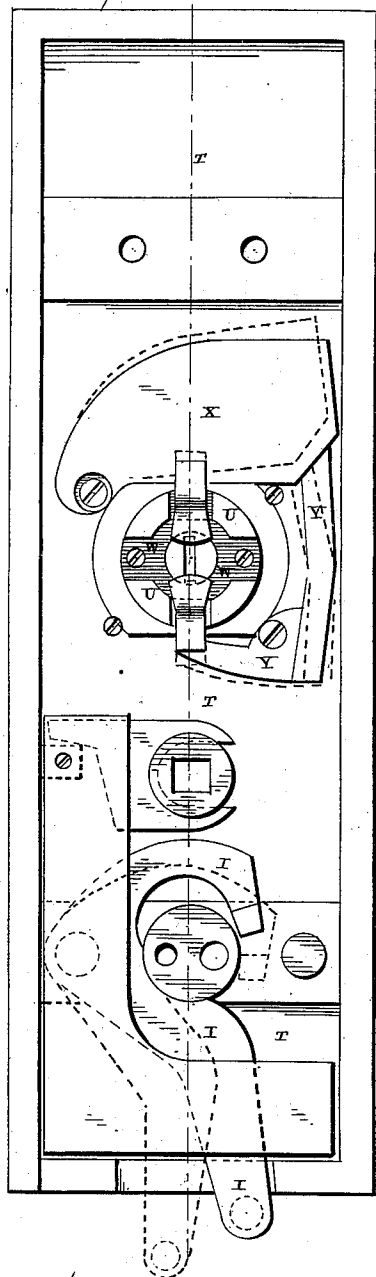
2 Sheets—Sheet 2.

W. E. BUDD & F. SICKELS.

COMBINED LOCK AND LATCH.

No. 372,962.

Patented Nov. 8, 1887.



WITNESSES.
L. T. Gardner
Edwin P. Ellis.

INVENTORS.
Wm. E. Budd,
Frank Sickels,
per J. A. Schmitt, atty.

UNITED STATES PATENT OFFICE.

WILLIAM E. BUDD, OF CHATHAM, NEW JERSEY, AND FRANK SICKELS, OF CHICAGO, ILLINOIS.

COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 372,962, dated November 8, 1887.

Application filed June 4, 1887. Serial No. 240,234. (Model.)

To all whom it may concern:

Be it known that we, WILLIAM E. BUDD, of Chatham, in the county of Morris and State of New Jersey, and FRANK SICKELS, of Chicago, in the county of Cook and the State of Illinois, have invented certain new and useful Improvements in a Combined Lock and Latch; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in combined locks and latches; and it consists in, first, the combination of the lock-case and the gravity-lever to which the combined latch and bolt is connected, and which is provided with a shoulder, with the partially-revolving key-post, which is weighted upon one side and provided with a recess in its weighted edge, a slide which is placed in the weighted side of the key-post, and which is operated by the key, and a pivoted lever provided with a projection to catch in a recess in the side of the weighted key-post, and which, when the key-post is turned so that its weighted side is downward, catches behind the shoulder in the upper edge of the gravity-lever, which operates the combined latch and bolt and thus helps to prevent the latch and bolt from being forced backward; second, the combination of the gravity-lever, which is placed inside of the lock-case and provided with vertical slot, with the combined latch and bolt grooved at one end, and which is connected thereto by a rivet which passes through the slot, whereby the combined latch and bolt has only a horizontal while the other part has a swinging circular movement; third, the combination of the lock-case with the face-plate, which is provided with a projection to catch between the two side plates of the case and with flanges upon its inner side, which catch over opposite sides of the lock-case and form guides for the movement of the combined latch and bolt; fourth, the combination of the escutcheon-plates with the castings or frames, which are applied directly to them and which contain the combination, with the two pivoted stops, the upper

one of which is weighted so as to operate the lower one and thus prevent the turning by a false key, of the casting in which the key-hole is made; fifth, the arrangement and combination of devices, which will be more fully described hereinafter.

The objects of our invention are to make the lever which locks the pivoted weighted key-post in position also serve as an additional guard against the backward movement of the combined latch and bolt; to provide the main face-plate with flanges which catch over opposite sides of the lock-case at that point where the combined latch and bolt passes through it, and thus strengthen the face-plate at that point where it is usually the weakest; to make the combined latch and bolt separate from the operating part by which it is moved, and thus cause the combined latch and bolt to have only a horizontal motion and allow its outer edge to always maintain a line parallel with the face of the face-plate; to provide the frame or case in which the combination is placed with two weighted stops, the upper one of which is made to assist, by its gravity, in closing the lower one.

Figure 1 is a side elevation of the interior parts of a lock embodying our invention, the parts being shown in one position in solid lines and in another position in dotted lines. Fig. 2 is a side elevation of the lock, showing the face-plate applied thereto. Fig. 3 is a perspective of the main face-plate, taken from its inner side. Fig. 4 is a similar view of the supplemental face-plate. Fig. 5 is a detached view of the combined latch and bolt and the operating part to which it is connected. Fig. 6 is an interior view of the escutcheon-plate and all its attachments. Fig. 7 is a vertical section taken through the escutcheon-plate and the frame in which the combination is placed. Figs. 8 and 9 are detached views of the stops which are applied to the frame containing the combination. Figs. 10 and 11 show detached views of the plates and washers which form the combination. Fig. 12 is a vertical section of the key-post. Fig. 13 is a detail view of the casting through which the key-hole is made and the stops which are applied thereto.

A represents the lock-case, which is of the

usual construction. Pivoted in the upper outer corner of this case is the gravity-lever B, which operates the combined latch and bolt C, and which in turn is operated by the latch-tumbler D. The openings through the side plates of the lock-case are made larger than the ends of the latch-tumbler D, so that the latch-tumbler will have room to accommodate itself to the knob-spindle, and thus prevent the tumbler from binding, as it would otherwise be liable to do. Generally, the combined latch and bolt has been made in a rigid form, and has been given only a swinging or circular motion. When thus constructed the outer edge of the combined latch and bolt C must be so shaped as to adapt it to engage with the striking-plate, and hence its outer edge can never extend in a parallel line with the outer edge of the face-plate E. In order to make the outer edge of the combined latch and bolt C vertical, as here shown, it is made in a separate and distinct piece from the part D, and the two parts are connected together by means of a rivet, F, which passes through the two edges of the part C and the slot G, which is made in the part B. This slot G is made just long enough to allow the part C a free horizontal motion, while the part B has a swinging or circular movement. The inner edge of the combined latch and bolt C is recessed, as shown in Fig. 5, and the sides of this recess are beveled or cut away, as shown, so that the combined latch and bolt C can have a slight lateral turning movement upon the part B, and thus adapt it to be used in connection with the face-plates set at various angles. In this combined latch and bolt are inserted one or more highly-tempered steel plugs, which will prevent the latch and bolt from being sawed off for the purpose of opening the door.

The latch-tumbler D, which operates the part B in the usual manner, is provided with teeth for the purpose of engaging with the lever H, which is operated by the dead-bolts I, as is fully described in the application filed by us on the 19th of May, 1887, and hence need not be more fully described in this connection.

The face-plate E is provided with a projection, J, on its inner side to catch in between the two side plates of the lock-case, and is provided with the two flanges K on its inner side and at its lower end where the opening for the combined latch and bolt is made. These flanges K catch upon opposite sides of the lock-case and strengthen the face-plate at that point where the greatest strength is needed, and at the same time form guides for the combined latch and bolt C.

The sides of the lock-frame are cut away, as shown by dotted lines in Fig. 2, just back of these flanges K, so that the combined latch and bolt C, which is thicker than the gravity-lever B, will fit snugly between the flanges K, and thus be guided in its movements by them. This combined latch and bolt, being loosely connected to the gravity-lever, can be turned

at an angle to the lever, and hence if the face-plate E is turned at a slight angle the combined latch and bolt C will be correspondingly turned. The flanges K serve both to strengthen the lock-case and as guides for the combined latch and bolt.

Usually the strain of the latch in closing the door is transferred from the latch upon the face-plate, and where the face-plate is narrow it is apt to cut its way into the wood and thus gradually work loose. The flanges K give the face-plate so much additional bearing in the wood, and, catching upon opposite sides of the lock-case, serve to brace and strengthen the face-plate in position at that point where it needs it the most.

Upon extra large and heavy doors, where additional strength is needed in the face-plate and where it is desired to have ornamental mountings, a supplemental piece, L, is used, as shown in Fig. 4, and which fits over the face-plate E.

The key-post M, as shown in our patent which bears date June 7, 1887, and our application which was filed May 19, 1887, is weighted upon one side, and is provided with a pawl, N, to engage with the notches in the part B, and which pawl is so shaped at its inner end as to extend across the key-hole, and thus prevent the insertion of a false key. In this key-post is also placed the vertically-moving slide R, which has its lower edge to extend down partially across the key-hole, and which slide is raised by the insertion of the key. In the upper edge of the key-post is made a recess, O, in which the projection P of the pivoted operating-lever Q catches when the weighted portion of the key-post is turned upward. When the key is inserted, the end of the pawl is forced downward and the slide R is raised, and in being raised the lever Q is raised at the same time, so as to detach the projection P from the recess O, so as to allow the key-post M to freely turn. When the weighted portion of the key-post is turned downward, the pawl engages with the notched edge of the part B and prevents the key-post from being turned by the jarring of the door or the insertion of a false key. When this key-post is so turned, as shown in dotted lines in Fig. 1, the free end of the lever Q drops downward, so as to engage with the shoulder S, formed in the upper edge of the part B, and thus form an additional safeguard against the latch or bolt being forced backward. This lever Q, it will be seen, acts in the double capacity of locking the key-post in one position and assists to lock the part B, so that it cannot be moved. The operation of the slide, the pawl N, and the lever Q is the same as shown and described in the patent and the application before referred to, with the exception that in this instance the lever Q is made to assist in locking the part B in place.

The escutcheon-plates T have the knobs swiveled to them, and they are fastened together through the door, so that one cannot be moved

independently of the other, as shown and described in our application which was filed on the 19th of May, 1887. The same dead-bolts, I, which are shown and described in said application are here used and shown connected directly to each escutcheon-plate T, and directly opposite the key-post of the lock is the frame or casing U, in which are placed the plate V and washers W, which form the combination. In the above-named application filed by us on the 19th of May the frame containing the combination is attached directly to the lock and is made independent of the escutcheon-plate. In this instance the frame U is connected directly to the escutcheon-plate for the purpose of preventing the cutting away of the door to such an extent as is necessary when it is connected directly to the lock and to save the trouble of having to remove the frame while the lock is being inserted into the door and being secured in position afterward. Where the frame is connected directly to the escutcheon-plate, as is here shown, it is only necessary to bore a hole through the door which corresponds to the key-post of the lock, as usual, and then secure the escutcheon-plate in position. The combinations being independent of the lock, they can be changed at any time without disturbing the lock, and may be the same upon both sides of the door or different, as may be preferred.

Pivoted upon the inner side of the escutcheon-plate are the two levers X Y, both of which are provided with a stop, Z, which extends partially across the key-hole, through the inner end of the frame U, and a catch, A', which catches in corresponding recesses C' made in the revolving casting B', through which the key-hole is made. The catches A' are shorter than the stops Z, because the former merely catch in the recesses C', while the stops Z extend downward, so as to partially close the inner end of the key-hole through the case U. When the key is inserted, its inner rounded end forces the two stops Z outward, thus causing the levers X Y to partially revolve upon their pivots and thus raise the stops A' out of the recesses C', so as to permit the casting B' to be turned by the key. If a false key is inserted, and which has a rounded end, and which will force the stop Z outward, the combination will prevent the key from being turned far enough around to disengage the catches A' from the recesses C'.

Having thus described our invention, we claim—

1. The combination of the key-post weighted upon one side and provided with a recess in its edge, the pawl for engaging with the gravity-lever B, to which the combined latch and bolt is connected, a vertically-moving slide in the key-post which is operated by the key, the lever provided with the projection to catch in the recess in the side of the key-post, and the part B, provided with the shoulder S, adapted to engage the end of the lever, substantially as shown.

2. The combination of the lock-frame having its sides cut away at its lower outer corners with the face-plate E, having the flanges K, which catch over the cut-away portions of the lock-case, the gravity-lever B, and the combined latch and bolt C, the latch and bolt being made to move between the flanges K, which fit snugly against opposite sides of the lock-frame, and between which the combined latch and bolt is held, substantially as described.

3. The combination of the lock-case, the gravity-lever B, which is pivoted therein and provided with the slot G, with the combined latch and bolt, which is grooved at one edge, so as to catch over the corresponding edge of the gravity-lever B, and the rivet F, which passes through both the combined latch and bolt and the gravity-lever, whereby the combined latch and bolt has both a vertical and a lateral movement upon the lever B, substantially as set forth.

4. The combination of an escutcheon-plate with a frame or casing which is connected thereto, the combination which is placed in this casing, and the two levers X Y, which are pivoted to the escutcheon-plate and which are provided with the projections A' Z, and the recessed revolving casting B', having the key-hole made through it, substantially as set forth.

5. The combination of an escutcheon-plate and a casting or frame, U, secured thereto and containing the combination, with the two levers X Y, pivoted to the escutcheon-plate, the weight of one of the levers serving to help to operate the other, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

WM. E. BUDD.
FRANK SICKELS.

Witnesses:

F. W. VOGDES,
A. C. BERRY.