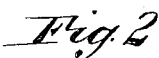
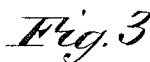
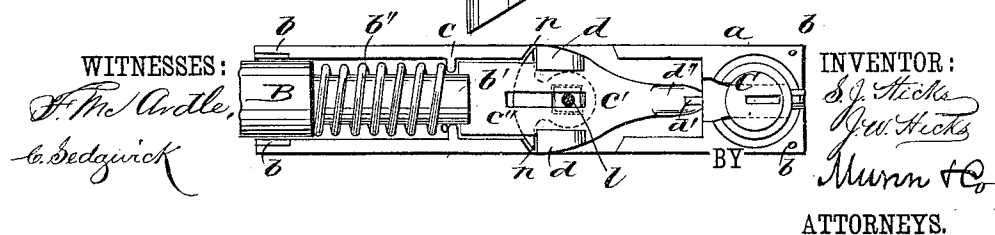


2 Sheets—Sheet 1.

No. 351,107.

Patented Oct. 19, 1886.



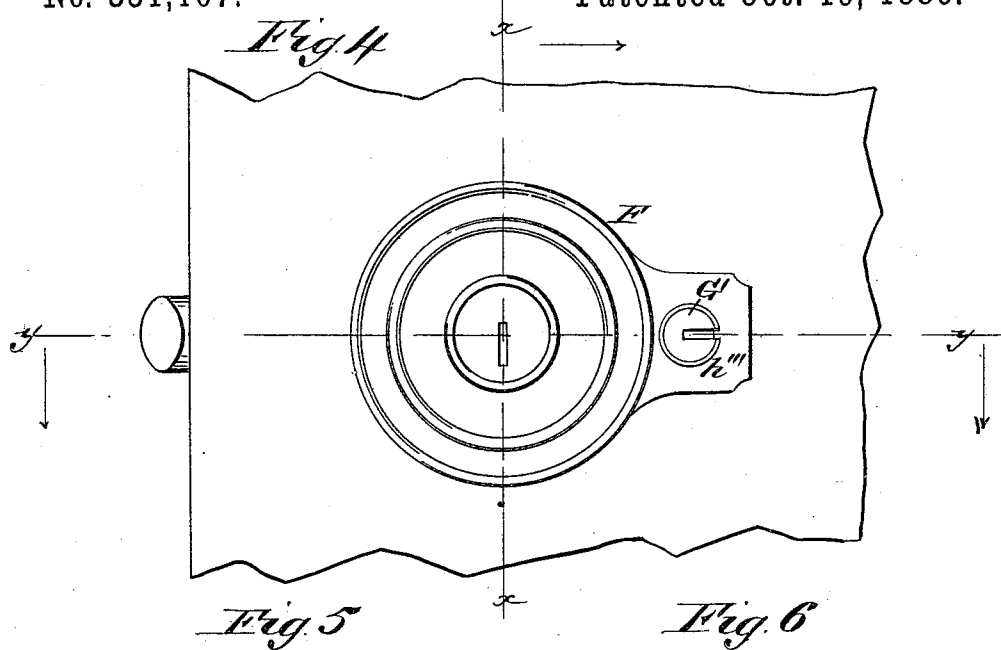
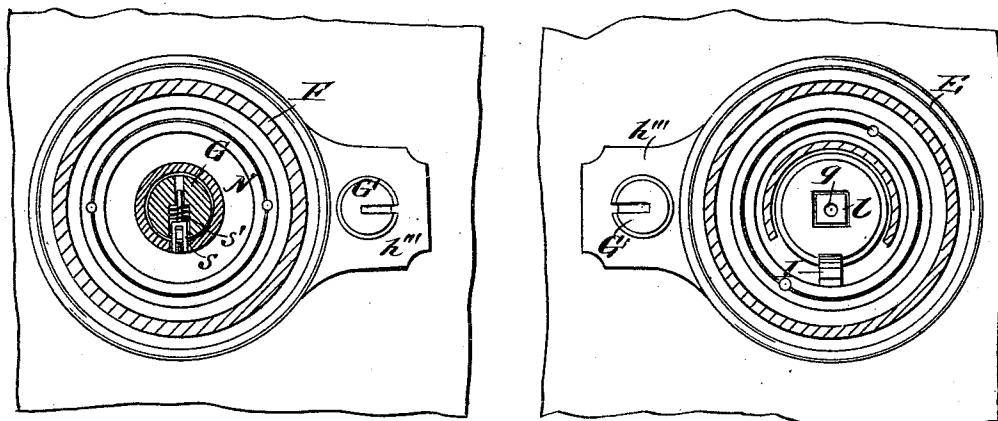
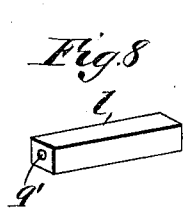
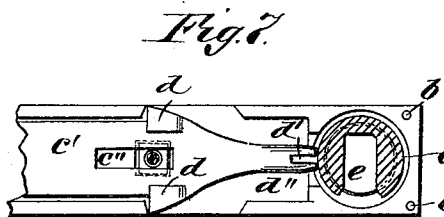
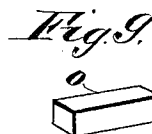
(Model.)

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S. J. & J. W. HICKS.
COMBINED LOCK AND LATCH.

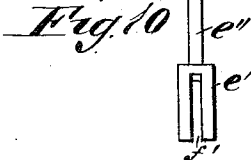
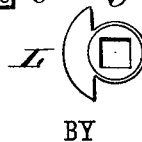
No. 351,107.

Patented Oct. 19, 1886.



WITNESSES:

W. M. Ordle
C. Sedgwick



INVENTOR:
S. J. Hicks
J. W. Hicks
Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

SIMEON J. HICKS AND JOHN W. HICKS, OF CHICAGO, ILLINOIS.

COMBINED LOCK AND LATCH.

SPECIFICATION forming part of Letters Patent No. 351,107, dated October 19, 1886.

Application filed March 29, 1886. Serial No. 197,066. (Model.)

To all whom it may concern:

Be it known that we, SIMEON J. HICKS and JOHN W. HICKS, of Chicago, in the county of Cook and State of Illinois, have invented a new and Improved Combined Lock and Latch, of which the following is a full, clear, and exact description.

Our invention relates to the construction of a cylindrical lock and latch, wherein the outer knob is disconnected from the latch in a peculiar and novel manner, and wherein the lock is arranged to be operated from either side of the door, as will be hereinafter more specifically described; and the invention consists of a combined latch and lock wherein the operating mechanism is inclosed partly within a cylindrical case and partly within the knobs arranged in connection with the latch, certain novel features of construction and combinations of parts being employed, all of which will be hereinafter fully explained, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional view of our improved latch and lock, the view being taken on line *xx* of Fig. 4. Fig. 2 is a sectional plan view taken on line *yy* of Fig. 4. Fig. 3 is a view of the mechanism contained within the lock-case, one side of such case being removed to disclose the contents. Fig. 4 is a view of a portion of a door, representing our improved lock and latch as it appears from the outer face of the door. Fig. 5 is a sectional view of the outer knob, the view being taken on line *zz* of Fig. 2. Fig. 6 is a sectional view of the inner knob, taken on line *ww* of Fig. 2, the push-button of the inner knob being, however, removed. Fig. 7 is a view of the rear portion of the lock, one half of the case being removed and the locking-cylinder being shown as moved to a position to prevent the bolt from being thrown back. Figs. 8 and 9 represent the apertured and movable shanks arranged in connection with the knobs and tumblers. Fig. 10 is an enlarged detail view representing the construction of the pins, and Fig. 11 is a detail view illustrating the construction of the tumblers.

The lock and latch forming the subject-mat-

ter of this application are contained within a cylindrical case, A, formed of semi-cylindrical sections *a a*, one of the sections being provided with recesses *b b*, while the other section is provided or formed with pins or lugs arranged to enter the recesses named. The locking bolt or latch B is formed with a shank, *b'*, about which there is coiled a spring, *b''*, one end of the spring abutting against the enlarged portion of the catch, while the other end of the spring abuts against an annular flange, *c*, as clearly shown. Extending to the rear of the shank *b'* there is a flattened portion, *c'*, formed with a longitudinal slot, *c''*, and provided upon each side of this slot with shoulders *d d'*, two of such shoulders being formed on each face of the flattened portion *c'*. The extreme end *d''* of the casting from which the latch or bolt B is formed is rounded and formed with a slot, *d'*. At the rear end of the case A there is a cylindrical recess, in which there is mounted a plug, C, said plug being formed with a central recess, *e*, arranged so that when the plug is turned to the position shown in Fig. 7 the latch or bolt cannot be turned back.

In order that the plug C may be moved to position to lock the bolt B, said plug is provided with two pins, *e' e'*, said pins being provided with shanks *e''*, about which there are coiled spiral springs *f*, the upper ends of the pins being slotted at *f'*, as best shown in Fig. 10. The pins *e'* are mounted in recesses formed for their reception in the plug C, and when this plug is moved to the position shown in Figs. 2 and 3 the spiral springs *f* will act to force the pins *e'* upward into recesses *f'' f''*, formed in the rear wall of the casing A, the position of the several recesses being so arranged that when the pins *e'* are within the recesses *f''* the recess *e* of the plug C will be in position to admit the end *d''* of the latch or bolt B; but when it is desired to prevent the latch or bolt B from being thrown back a key, D, arranged to be inserted from either side of the door, is forced inward to the position shown in Fig. 2, and, entering the slots *f'*, formed in the pins *e'*, forces said pins within their recesses in the plug C and out of engagement with the recesses in the case A, after which movement of the pins it will be readily understood that the plug C may be turned to the

position shown in Fig. 7, thereby preventing the throwing back of the bolt B.

Each of the knobs employed in connection with our improved form of latch and lock is provided with an inner section, *g*, and an outer section, *g'*, the knob secured to the inner face of the door being shown at E, while the knob upon the outer face of the door is shown at F. Each of the inner sections, *g*, of the knobs E 5 F is formed with a flange, *h*, which is overlapped by the rose employed to hold the knob in position, the said rose being provided with a recess within which the flange fits. As shown best in Fig. 1, the rose *h'*, upon the outside of the door, is secured to the rose *h''* upon the inside of the door by bolts *k*, the idea being to prevent the removal of the outer knob.

Referring, now, more generally to the mechanism contained within the knob E, and arranged upon the inner side of the bolt or latch B, *l* is a square shaft or bar fitting within a square aperture formed in the inner section of the knob E, and also fitting within a square aperture formed in the hub *l'* of a tumbler L, the construction of which is best shown in Fig. 11, said construction being, however, indicated in Figs. 2 and 3. The hub *l'* of the tumbler L fits within a recess, *m*, formed in the case A, as best shown in Fig. 2, and the extending arms 20 *n n* of the tumbler L bear against the shoulders *d d* upon the inner side of the latch or bolt B, so that when the plug C is in the position shown in Fig. 2, the bolt B may be thrown back by simply turning the knob E, as will be readily understood. A tumbler, *L'*, that is a duplicate of the tumbler L, is arranged upon the outer side of the catch or bolt, the hub of this tumbler *L'* projecting through an aperture, *m'*, as shown, engagement between the 25 section *g* of the knob F and the tumbler *L'* being established by means of a square shaft or bar, *o*, as best shown in Fig. 1, this shaft or bar *o* being normally held in the position shown in Fig. 1 by a spiral spring, *q'*, coiled about the inwardly-extending shank *p* of a pin-cylinder, G, which will be hereinafter more specifically described.

In order that the connection between the knob F and the tumbler *L'* may be broken, if desired, we provide the inner knob with a central push-button, H, having an inwardly-extending stem, *q*, which passes through a central bore, *q'*, formed in the bar *l*, and into the longitudinal slot *e''*, that is formed in the square portion *e'* of the latch or bolt B, the push-button being normally held in the position shown in Fig. 1 by a spiral spring, *q''*, that is arranged as shown; but when it is desired to throw the knob F out of engagement with the bolt the 30 button H is pushed inward to the position shown in dotted lines in Fig. 1 and in full lines in Fig. 2, which movement of the button will force the bar *o* out of engagement with the tumbler *L'*, and consequently disconnect the 35 outer knob from engagement with the bolt, the button H being held in the position shown in Fig. 2 by a spring-arm, I, arranged as

shown. It will be observed that the bars *l* and *o* form a sectional spindle, of which the section *o* is movable longitudinally in its knob-shank, 70 though neither section is permitted to rotate in its knob-shank.

In order that the connection between the knob F and the bolt may be established from the outer side of the door, the central portion 75 of the outer face of the knob F becomes the escutcheon of a lock of which the pin-cylinder G is a portion. In this pin-cylinder G, which is surrounded by an inclosing-cylinder, N, extending outward from the inner section, *g*, of the knob F, there are arranged any desired number of pins, *s s*, formed with shanks and slots, to correspond with the shanks and slots of the pins *e'*, in this case, however, the pins being forced forward by their springs *s'* into 80 engagement with apertures formed in the inclosing-casing N, as best shown in Fig. 5, so that the pin-cylinder cannot be moved except when the pins are forced from engagement with the recesses of the inclosing-case by a properly-constructed key—such as the key T, 85 shown in Fig. 1; but after the key T has been inserted in the pin-cylinder its shank *p* may be forced inward, thus moving the bar *o* into engagement with the tumbler *L'*, the bar *o* forcing the push-button H outward against the tension of the spring-catch I, and it will, of course, be understood that after the knob F has, through the medium of its bar *o*, been brought into engagement with the tumbler the bolt or latch B may be thrown back by simply turning the knob. 90 95 100

The roses *h' h''* are formed each with an extension, *h'''*, covering the key-holes for the pin-cylinder C, and carry revoluble buttons G', 105 apertured to allow the key to engage the said cylinder.

In addition to the recesses *f''*, the case in which the plug C is mounted is provided with other recesses, *t''*, into which the shanks *e''* of the pins *e'* fit, so that if the key does not exactly fit—that is, if the pins *e'* are thrown too far forward—they will enter the recesses *t''*. The lock is thus provided with a double safeguard. 115

One of the greatest advantages of our improved form of lock is due to the fact that a recess adapted to receive the lock may be formed in the face of the door by means of an ordinary form of bit or auger, no dressing or fitting of the recess being required, as in the case of locks contained in a rectangular case such as are ordinarily employed. 120

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is— 125

1. The combination, with the lock-case provided with a transverse cylindrical bearing at its rear end, and the bolt in the case having a rearward extension adapted to pass into the said bearing, of the cylindrical plug in the bearing having a transverse recess to receive the rear end or extension of the bolt, a longitudinal key-slot, spring-actuated locking-pins 130

extending into the slot and through the plug into the wall of the cylindrical bearing, substantially as set forth.

2. The combination, with the lock-case, a bolt therein, a tumbler or yoke for operating the bolt and the inner and outer knobs, of a sectional spindle connecting the knobs and tumbler, the outer section being longitudinally movable independent of the tumbler and knob, and mechanism, substantially as described, extending from the inner knob to the said outer section of the spindle for moving said section away from the tumbler, whereby the outer knob may be disconnected from the bolt, and be thereby rendered inoperative, substantially as set forth.

3. The combination, with the lock-case, a bolt therein operating tumblers or yokes at opposite sides of the bolt, and the inner and outer knobs, of the spindle formed of two independent sections connecting the said tumblers and knobs, the outer section being longitudinally movable from the tumbler, mechanism extending from the inner knob to the said movable section for disengaging it from its tumbler, and a spring for returning said movable section to its normal position, substantially as set forth.

4. The combination, with a bolt and its case, of a plug, C, arranged within said case, said plug being formed with a recess, *e*, and with recesses in which pins *e' e'* are mounted, recesses *f'' f''* being formed in the case and slots *f'* being formed in the pins, the pins being ar-

ranged in connection with springs *f*, substantially as described.

5. The combination, with a lock provided with a spring-actuated bolt and tumblers engaging lugs on said bolt, of an inner knob provided with an apertured bar engaging one of said tumblers, and with a push-pin extending through said bar and the lock-bolt, and means for holding said pin in the inner position, and of an outer knob provided with a spring-pressed sliding bar engaging with the other tumbler and bearing against the said push-pin, and with a sliding locking-cylinder having a shank bearing against the said sliding bar, substantially as described.

6. The combination, with a bolt and its case, the bolt being formed with a longitudinal slot, *e''*, of tumblers L L', a bar, *l*, formed with a central bore, a push-button, H, formed with a stem, *q*, bar *o*, and pin-cylinder G and its pins *s*, all parts being arranged substantially as described.

7. The combination, with a bolt and its case, of an outer knob having a section, *g*, and containing a pin-cylinder, G, formed to receive slotted pins *s*, a tumbler, L', and a bar, *o*, connecting said knob and bolt, substantially as described.

SIMEON J. HICKS.
JOHN W. HICKS.

Witnesses:

F. H. GOIN,
C. E. MARSHALL.