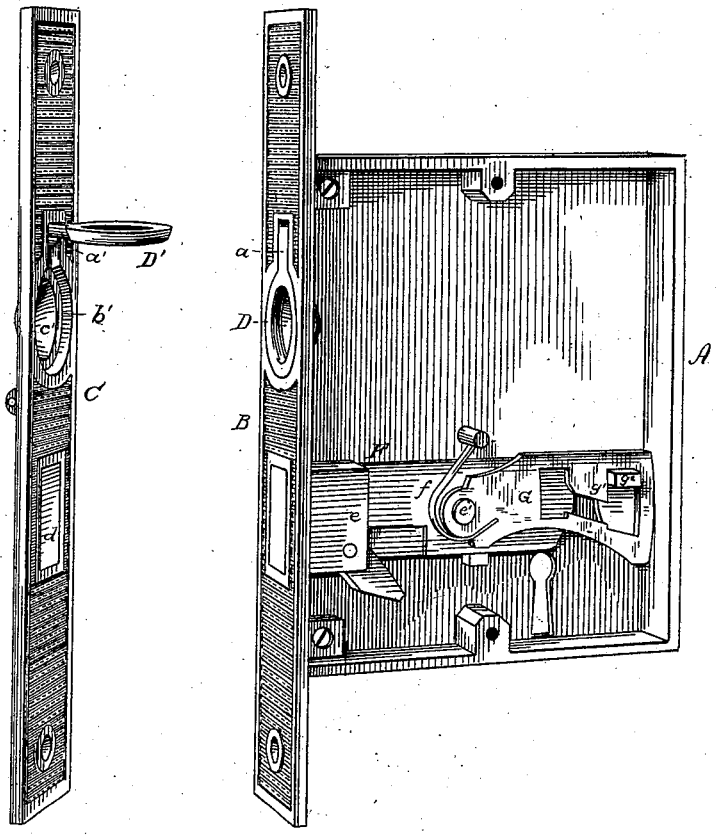
2 Sheets—Sheet 1.

H. WADSWORTH.

Lock for Sliding-Door.

No. 200,366. **Patented Feb. 12, 1878.**

Fig. 1.



WITNESSES:

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2 Sheets—Sheet 2.

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Fig. 2.

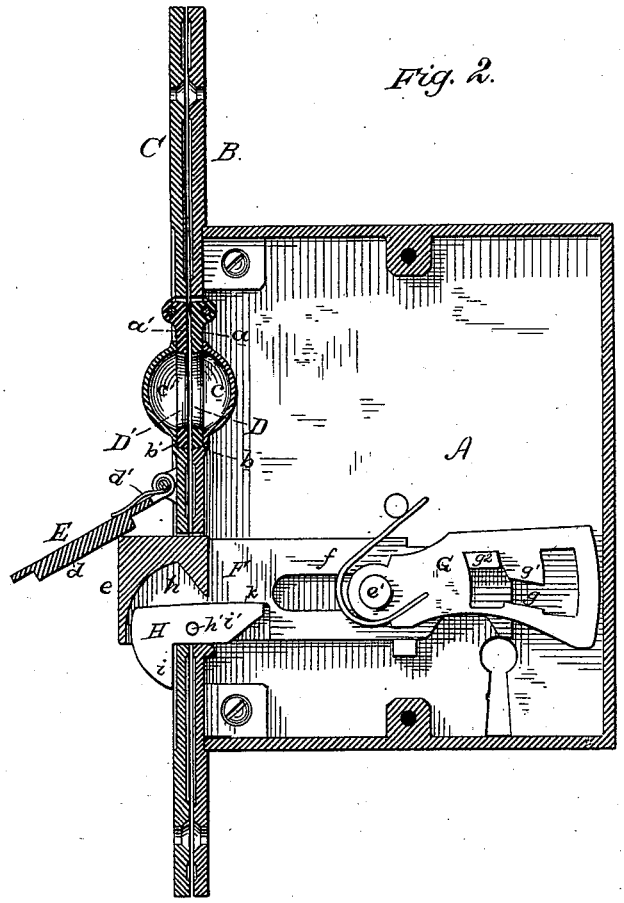
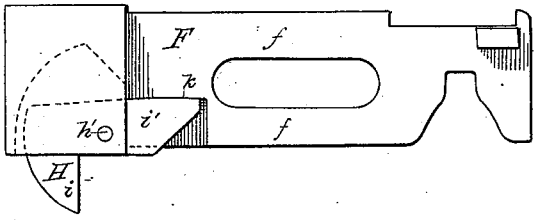


Fig. 3.



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UNITED STATES PATENT OFFICE.

HERBERT WADSWORTH, OF HOHOKUS TOWNSHIP, BERGEN COUNTY, NEW JERSEY, ASSIGNOR TO HOPKINS & DICKINSON MANUFACTURING COMPANY, OF NEW YORK CITY.

IMPROVEMENT IN LOCKS FOR SLIDING DOORS.

Specification forming part of Letters Patent No. **200,366,** dated February 12, 1878; application filed December 19, 1877.

To all whom it may concern:

Be it known that I, HERBERT WADSWORTH, of Hohokus Township, in the county of Bergen and State of New Jersey, have invented a new and useful Improvement in Sliding-Door Locks; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is to produce a mortise-lock, especially adapted for sliding doors, which will be provided with a simple and convenient device for pulling the doors together, in place of the comparatively complex spring pull-bar now generally used; will have means for locking such doors, after being closed, more secure than those now employed and much simpler in construction, and consequently less liable to get out of order; and, in addition, will have the keeper-plate so constructed as to close the bolt-opening made through it after the bolt is withdrawn, so as to prevent dust and dirt from getting behind the keeper-plate and into the keeper-case, if one is used, and also to make a better finish of the keeper-plate.

My invention therein consists, first, in the main bolt having a solid outer end, and recessed from its under side to receive the concealed hook-bolt, which is pivoted therein, and is operated by the movement of the main bolt; and, second, in providing the keeper-plate with a swinging plate, pivoted to the inner side of the keeper-plate, and having a projecting face, which is arranged to enter the bolt-opening when the bolt is withdrawn therefrom, and presenting the same appearance as the end of the bolt in its face-plate, as fully hereinafter explained.

To enable others skilled in the art to manufacture my lock, I proceed to describe the same, having reference to the drawings, in which—

Figure 1 is a perspective view of both portions of the lock, with one side of the case removed to show the bolt-operating mechanism, and with the pull-ring on the keeper-plate swung out into the position it assumes when the door is being closed; Fig. 2, a section of both portions of the lock with the bolt thrown; and Fig. 3, a separate view of the main bolt and the pivoted supplementary hook-bolt.

Like letters denote corresponding parts.

A represents the case containing the bolt and operating mechanism. B is the face-plate to the same, and C is the keeper-plate. The face and keeper plates are to be ornamented in any desirable manner, both preferably of the same design. To the face-plate B, above the bolt, is pivoted a ring, D. The upper part of this ring is provided with a short arm, *a*, having a rearward projection, which is pivoted to two small lugs on the inside of the face-plate. The face-plate has an annular depressed seat, *b*, formed thereon, on which the ring D rests, flush with the surface of the plate. The face-plate, inside of this annular seat *b*, is cast with a spherical or rounded depression, *c*, so that the finger of a person can be passed in behind the ring to draw it outwardly. The keeper-plate C is provided with a ring, D′, of similar construction and secured in the same manner and position as the ring D, it having an arm, *a′*, and the keeper-plate being provided with an annular depressed seat, *b′*, and spherical depression *c′*, all like the corresponding parts on the face-plate B.

The keeper-plate C may be attached to a case, if desired, but it is shown without one, and can be used in either way. To the rear side of the keeper-plate is pivoted a swinging plate, E, which hangs down over the bolt-opening, and has a rectangular projecting face, *d*, which fits closely into such bolt-opening, and when swung into the same is flush with the face of the keeper-plate. This plate E is kept in the bolt-opening by a spring, *d′*, or the plate can be weighted so as to swing by its weight into the bolt-opening, if desired; but I prefer to use the spring. When the bolt is thrown, the plate E is forced back, and does not interfere at all with the motion of the bolt, and as the bolt is withdrawn the plate follows it, and again closes the opening. This swing-

ing plate prevents dirt and dust from getting behind the keeper-plate, and gives a finish to the keeper-plate. In addition, since the swinging plate fills the bolt-opening of the plate C, and in appearance is like the end of the bolt in the opening of the plate B, the faces of both these plates can be ornamented with the same design, and will look precisely the same, thus making a more attractive and saleable lock.

F is the bolt to the lock, having an enlarged rectangular head, *e*. Its shank *f* extends across the case A, and is slotted, and slides on a stationary stud, *e'*. On this stud *e'* is pivoted one end of the spring-tumbler G, which has a slot, *g*, and centrally-projecting part g^1, to engage with the lug g^2 on the bolt-shank, and hold the bolt at either end of its movement. The head *e* of the bolt has a slot, *h*, Fig. 2, cut in its under side, and not extending through the end of the bolt, and in this slot is pivoted, at the point *h'*, the supplementary hook-bolt H. This bolt is of the form shown in Figs. 2 and 3, having a head, *i*, with a rounded end, and a shank, *i'*, placed at right angles to the head. The end of the shank *i'* may be beveled off, as shown, and a shoulder, *k*, is formed on the shank *f*, to limit the movement of the hook-bolt. When the main bolt is thrown forward the shank of the hook-bolt presses against the bottom of the bolt-opening in the face-plate B, and turns the hook-bolt so that the shank *i'* assumes a horizontal position, while the head *i* takes a vertical position, and locks against the inner side of the keeper-plate, as shown in Fig. 2, in which position it is firmly held, since the pivot *h'* is in front of the bolt-opening, and the shank *i'* impinges on the bottom of such bolt-opening to the rear of the pivot, thus preventing the hook-bolt from turning on its pivot. When the main bolt is withdrawn into its case the inside of the head *i* of the hook-bolt strikes against the inside of the keeper-plate, and is thrown around on its pivot so as to pass through the bolt-opening.

The advantages of this portion of my lock over the ordinary curved locking-bolt now generally used are numerous. The most important of these advantages are, that my bolt is more secure than the curved bolt, since the doors cannot be unlocked by lifting them up, which is the case with the curved bolt when the doors are not closely fitted; and, in addition, my bolt is not so liable to be broken, bent, or otherwise injured when left projecting from the case of the lock as the curved locking-bolt.

I am aware that piano-locks, having a pivoted hook-bolt carried upon and operated by the movement of the main bolt, are old; but in such locks the pivoted hook-bolt projects through the end of the main bolt, and is not concealed when the main bolt is withdrawn into the case of the lock, while in my sliding door-lock the hook-bolt is so concealed and the solid and unbroken end of the main bolt only left exposed.

Having thus fully described my invention, and explained some of its advantages, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a lock for sliding doors, the main bolt F, having a solid outer end, and recessed from its under side to receive the concealed pivoted hook-bolt H, the said hook-bolt being operated by the movement of the main-bolt, substantially as and for the purpose set forth.

2. The combination, with the keeper-plate C, of the swinging plate E, having a face, *d*, adapted to enter the bolt-opening, and presenting the same appearance as the end of the bolt in the face-plate B, substantially as and for the purpose set forth.

This specification signed and witnessed this 4th day of December, 1877.

HERBERT WADSWORTH.

Witnesses:
HENRY J. RYERSON,
BARNEY WINTER.