

J. COLLINS.  
LOCKS FOR SLIDING DOORS.

No. 176,930.

Patented May 2, 1876.

Fig. 1.

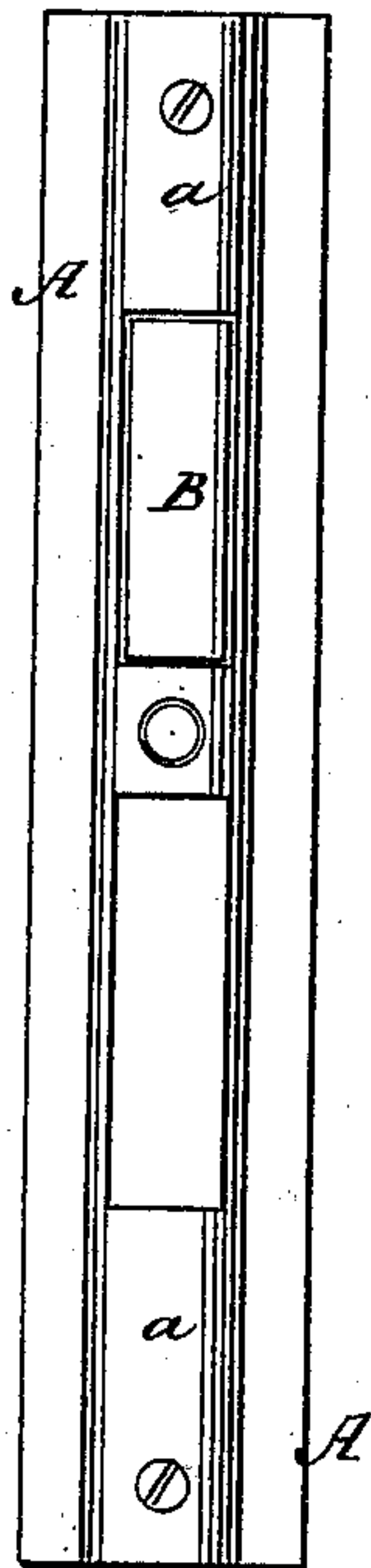


Fig. 2.

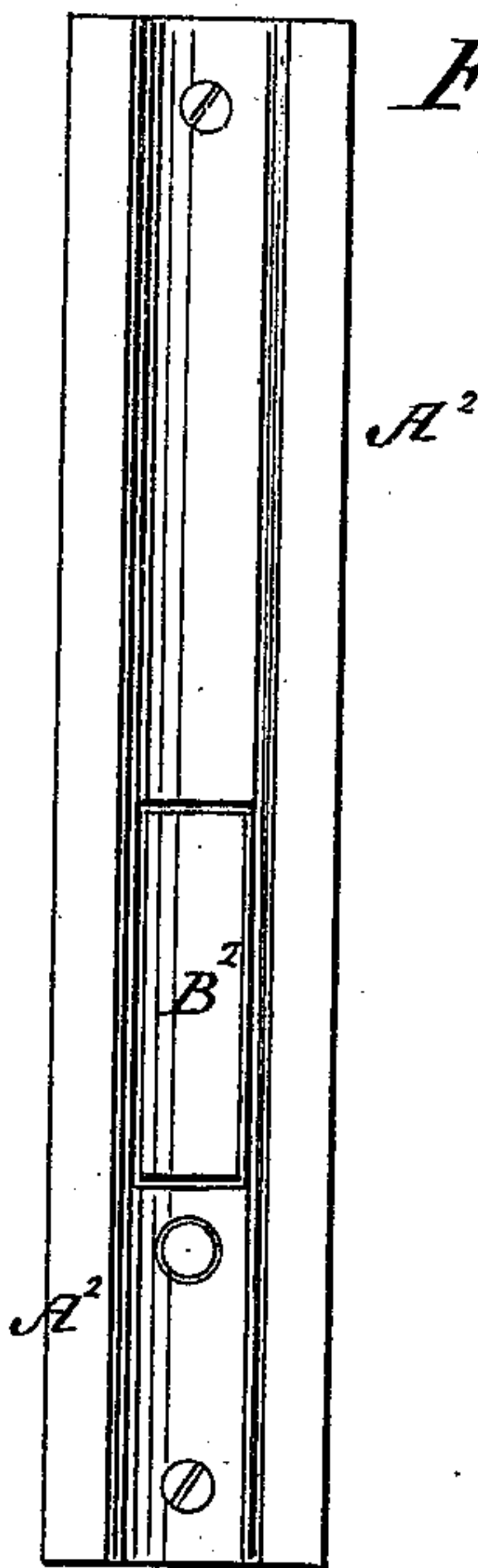


Fig. 3.

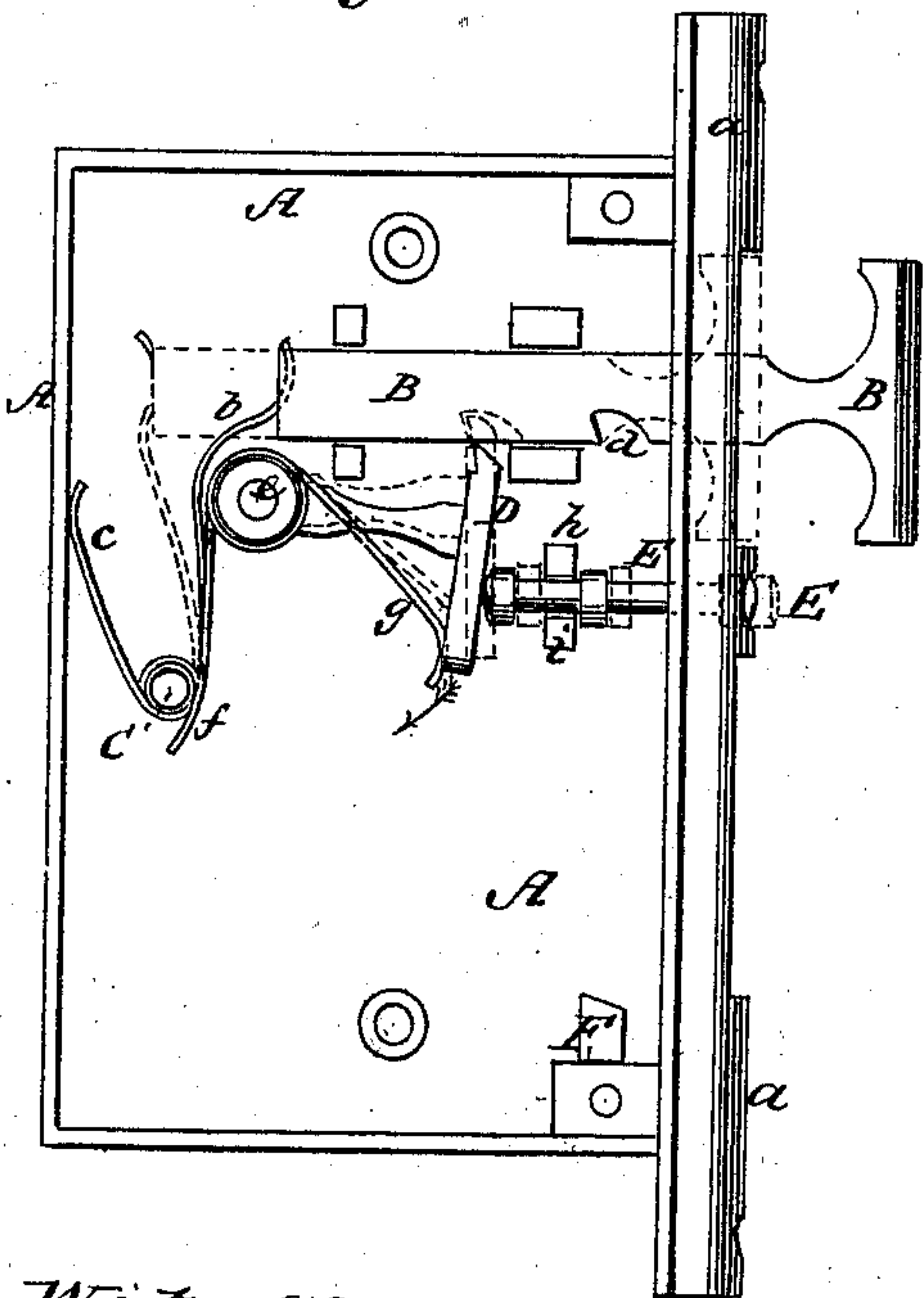
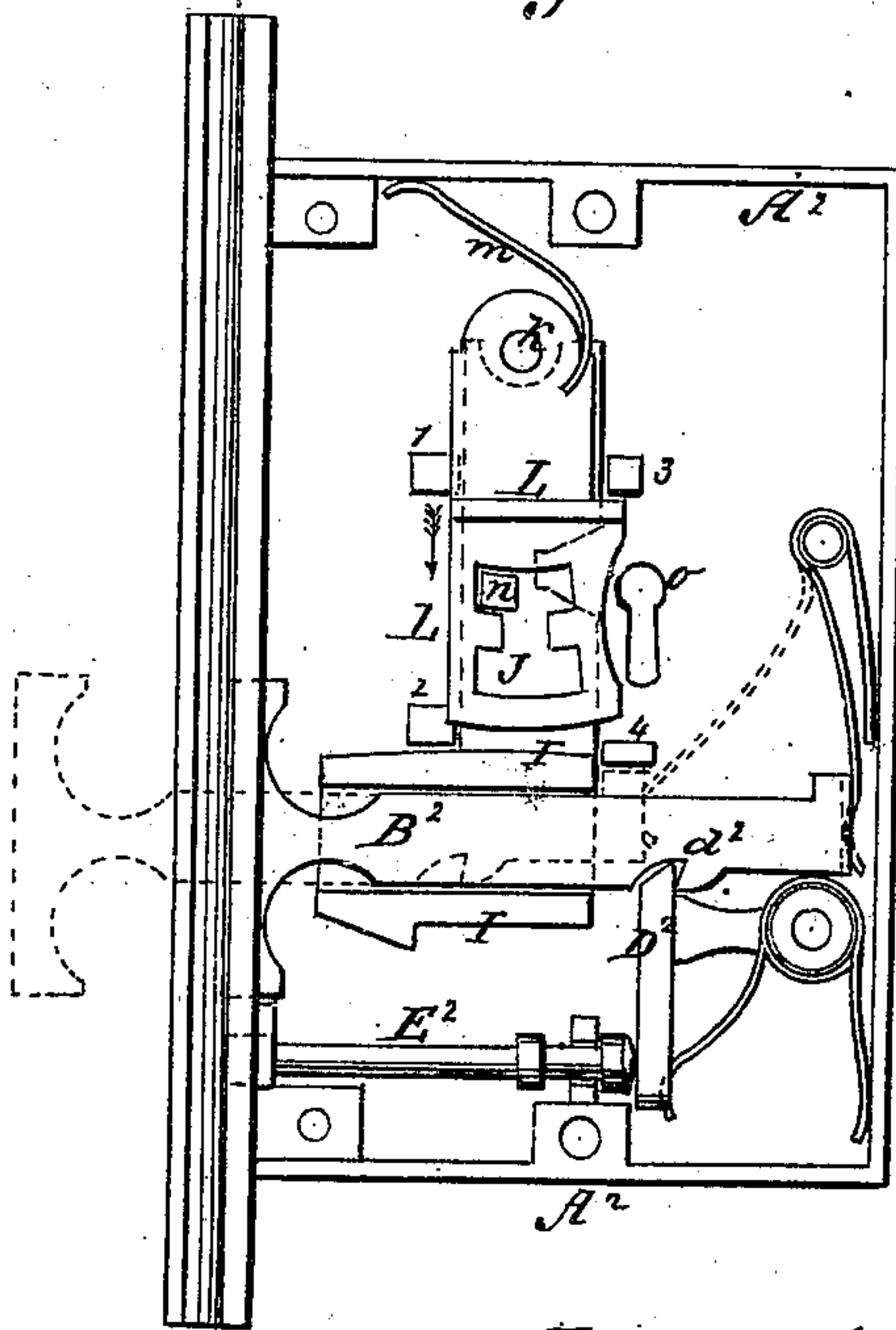


Fig. 4.



Witnesses:  
E. Wolff.  
Jacob Felbel

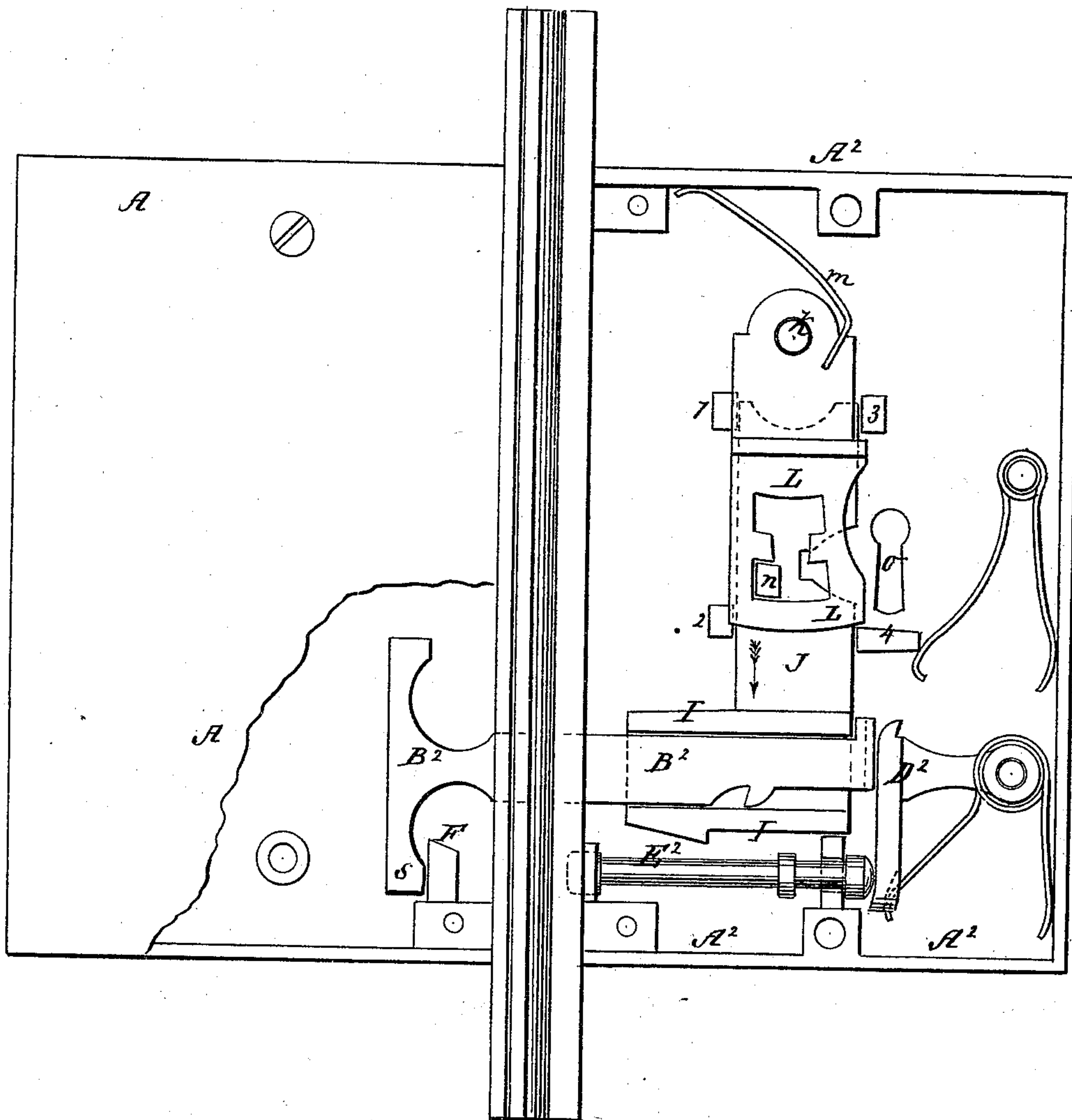
Inventor:  
John Collins  
By attorney  
J. N. McArthur

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Fig. 5.



Witnesses:

E. Wolff.  
Jacob Selbel

Inventor:

John Collins  
By attorney  
J. N. McArthur



# UNITED STATES PATENT OFFICE.

JOHN COLLINS, OF HOHOKUS TOWNSHIP, BERGEN COUNTY, NEW JERSEY,  
ASSIGNOR TO HOPKINS AND DICKINSON MANUFACTURING COMPANY.

## IMPROVEMENT IN LOCKS FOR SLIDING DOORS.

Specification forming part of Letters Patent No. **176,930**, dated May 2, 1876; application filed  
March 17, 1876.

*To all whom it may concern:*

Be it known that I, JOHN COLLINS, of Hohokus township, in the county of Bergen, in the State of New Jersey, have invented a new and useful Improvement in Locks for Sliding Doors; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to certain new and useful improvements in that kind of lock or fixture which is employed upon sliding doors of houses, and has for its objects to render such fixtures more economic of manufacture, more desirable, and efficient in operation, and at the same time simpler of construction, and consequently less liable to get out of order.

Previous to my invention it has been customary in the manufacture of sliding door mortise-locks to have a vibrating catch-lever or trigger to retain the pull in place within the case of the lock, and the arrangement of said lever has been such, that to free the pull (to permit its automatic projection outward) it was necessary to press upward, with the thumb, the exposed end of said lever; and in this necessary manipulation of the said lever there was more or less liability of the pull striking the hand of the person when projected outward by the throwing-spring. I propose to overcome this objectionable feature by the use, in lieu of said usually-employed lever, of a push-pin, so arranged that the hand of the person in manipulating said push-pin will naturally be in a position in which it cannot be struck by the projected pull or handle when the latter flies out. To this end and object, the first part of my invention consists in the combination, with the pull, and a suitable spring-catch for retaining said pull in an incased condition, of a push-pin, arranged below the pull, and having its outer end sufficiently exposed to permit a slight pressure inward by the application of the forefinger, as will be hereinafter more fully explained. It has also been customary, previous to my invention, to make the lock with a locking-bolt or device, by means of which, through

the medium of a key, the doors to which the fixtures were applied could be securely fastened together, so that neither could be slid open.

I propose to simplify the mechanism of the fixture, while at the same time I render it more durable and efficient, by entirely dispensing with the usual locking bolt or device, and making the pull perform also the functions of a fastener to lock together the doors; and to this end and object the second part of my invention consists in so combining the horizontally-sliding pull with a vertically-sliding bar and a tumbler that the pull, when projected into the keeper portion of the fixture, can be moved downward sufficiently to effect an interlocking with said keeper portion of the fixture, as will be hereinafter more fully described.

To enable those skilled in the art to make and use my improved sliding-door mortise fixtures, I will proceed to more fully describe the construction and operation of the same, referring by letters to the accompanying drawings, in which—

Figure 1 is an edge or face view of the keeper fixture; Fig. 2, a similar view of the lock; Fig. 3, a side view of the lock with the cap-plate removed so as to expose to view the interior of the lock; Fig. 4, a similar view of the keeper, and Fig. 5 a side view of both halves of the fixture, showing the relative position occupied when the doors to which they may be attached are closed together, and illustrating how the two parts are locked together.

In Figs. 3 and 4 each of the pulls is shown in the two positions it is capable of occupying, said part in each of said figures being drawn in full lines in one position, and in dotted lines in the other position, and in the several figures the same part will be found designated by the same letter of reference.

To avoid the possibility of ambiguity in the specification of details, I will first describe the several parts of the keeper portion, and then the devices composing the lock portion of the fixture.

In the former, A is the case, made much after the usual pattern, but with two mortises or openings of about equal size in its convex



face *a*, one for the accommodation of the pull B, and another for the reception of the pull of the other or lock portion of the fixture when the parts are to be locked, as I will presently explain. The piece B is forced or projected outward for use, as seen at Fig. 3, by means of a spring-wire coiled about the teat C, as shown, and having one end, *b*, bearing against the inner end of pull B, while the other end *c* bears on the back of the case A.

On one side of the pull B is formed a notch or depression, *d*, into which fits one end or point of a sort of T-shaped catch-lever or arm, D, which is pivoted at *e* on a teat projecting from the case A, and which has exerted upon it a continual spring-pressure, tending to effect an engagement between it and the pull B by a spring-wire coiled about its hub, and having one end, *f*, resting on the teat C, or some other fixed support, while its other end, *g*, bears upon lower end of arm D, as illustrated.

E is a push-pin, the outer end of which protrudes slightly through a countersunk hole in the face of the case A, and the inner end of which comes in contact with the arm D, as shown, so that by pushing inwardly said pin E the arm D will be vibrated upon its pivot *e* in the direction indicated by the arrow at Fig. 3, and against the pressure of spring-arm *g*. This push-pin E is steadied at its inner end between lugs *h i*, arranged on each side of it, and is so cut away adjacent to said lugs that the latter also act as stops to limit its extent of end play or movement. F is a lug or abutment cast with the case A, and serving as a stop or lip for the locking pull of the other half of the fixture to engage with in a manner to be presently described.

The operation of the parts just alluded to needs little explanation, as it is quite apparent from the drawings.

When the pull B is pushed in, into the position shown in dotted lines at Fig. 3, it is locked in this position by the retaining-arm or catch-lever D, as shown, and when it is desired to protrude the pull B for use, the outer end of push-pin E is simply pressed inward with the forefinger, whereby the arm D is vibrated on its pivotal point sufficiently to effect the disengagement of its retaining point from the notch *d*, when, by the action of spring *b*, the pull B will be protruded or shot out, ready for use as a handle to pull the door by.

In the lock portion of the fixture (see Fig. 4) there is but one mortise in the concave face of the case A<sup>2</sup>, and the pull B<sup>2</sup>, in lieu of being mounted to slide in housings or bearing formed on, or permanently located relatively to, the case A<sup>2</sup>, is arranged to slide in a housing, I, formed at the lower end of a sliding bar or piece, J, that moves on the back plate or side of case A<sup>2</sup>, between suitable guiding and laterally-retaining lugs 1 2 3 4, and on this bar or plate J is mounted, by a pivot at *k*, a tumbler piece, L, which is provided with a spring, *m*, and is so shaped as to properly

operate in conjunction with the bar J and its lug or pin *n*, after the fashion of an ordinary single tumbler-lock.

The pull B<sup>2</sup>, like that described of the other half of the fixture, has a notch at *d*<sup>2</sup>, with which engages the locking or retaining point of arm D<sup>2</sup>, which arm is provided with a spring, and is operated upon by a push-pin, E<sup>2</sup>, in about the same manner as already explained of the devices shown in the other half (keeper portion) of the fixture.

The operation of the pull B<sup>2</sup>, so far as its function of a handle is concerned, is about the same as already explained of pull B, and will be perfectly understood from what I have said of the latter; and from an examination of Fig. 4 of the drawings, where the pull B<sup>2</sup> is shown in full lines in its position of disuse, and in dotted lines protruded ready to be used for a handle for pulling out the door.

At Fig. 5, where I have shown the two parts of the fixture locked together, will be seen the position to which the pull B<sup>2</sup> is shifted or moved when its locking function is brought into use, and a few words will explain fully the operation of the mechanism by which the shown transposition of parts is effected.

When it is desired to lock the doors together the pull B<sup>2</sup> is shot out and the doors run together, the pull B<sup>2</sup> freely entering through the lower one of the two mortises into the case A of the keeper portion of the fixtures. By the insertion and turning then of a key in the key-hole *o* of case A<sup>2</sup> the tumbler-plate L is first lifted to free the bar J, and the latter is then moved by the key in the direction indicated by the arrow at Fig. 4 until it is made to assume the position or location shown at Fig. 5, whereby the pull B<sup>2</sup> is shifted bodily into the position seen at said last-mentioned figure, and so that its end *s* passes behind or interlocks with the lug or lip-like portion F.

It will be seen that by the combination of the pull B<sup>2</sup> with the lock devices L J the outer T-shaped portion of B<sup>2</sup> is made capable of performing, in conjunction with the mortised-out keeper portion of the door-fixture, the function of a lock, as described, for fastening the doors together, and that thus the usual additional awkwardly-shaped and peculiarly-moving locking-bolt is entirely dispensed with. It will also be seen that by the employment of a push-pin, as shown and described, to effect the releasement of the pull when it is desired to permit the usual automatic projection of said pull, instead of a lever device such as heretofore used, not only is the danger of the knuckles being struck by the suddenly-projected pull avoided, but the retaining and tripping devices may be so located as not to interfere with the downward movement, bodily, of pull-bar when the latter is protruded, in the manner and for the purpose already explained.

Having now so fully described the construction and operation of my improved mortise-lock fixture for sliding doors that any person



skilled in the art to which my invention relates can make and use the same, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the pull and retaining catch or device, a push-pin, arranged substantially as set forth, the whole constructed to operate as described.

2. The combination of a pull with a sliding carrier or its equivalent for shifting the posi-

tion of the pull to make it perform also the office of a locking-bolt, substantially as set forth.

In testimony whereof I have hereunto set my hand and seal this 11th day of March, 1876.

JOHN COLLINS. [L. s.]

In presence of—

OSCAR KING,

JOHN N. BLAKELY.