J. Behel,

Lock.

№ 74,283. Patented Feb. 11, 1868.

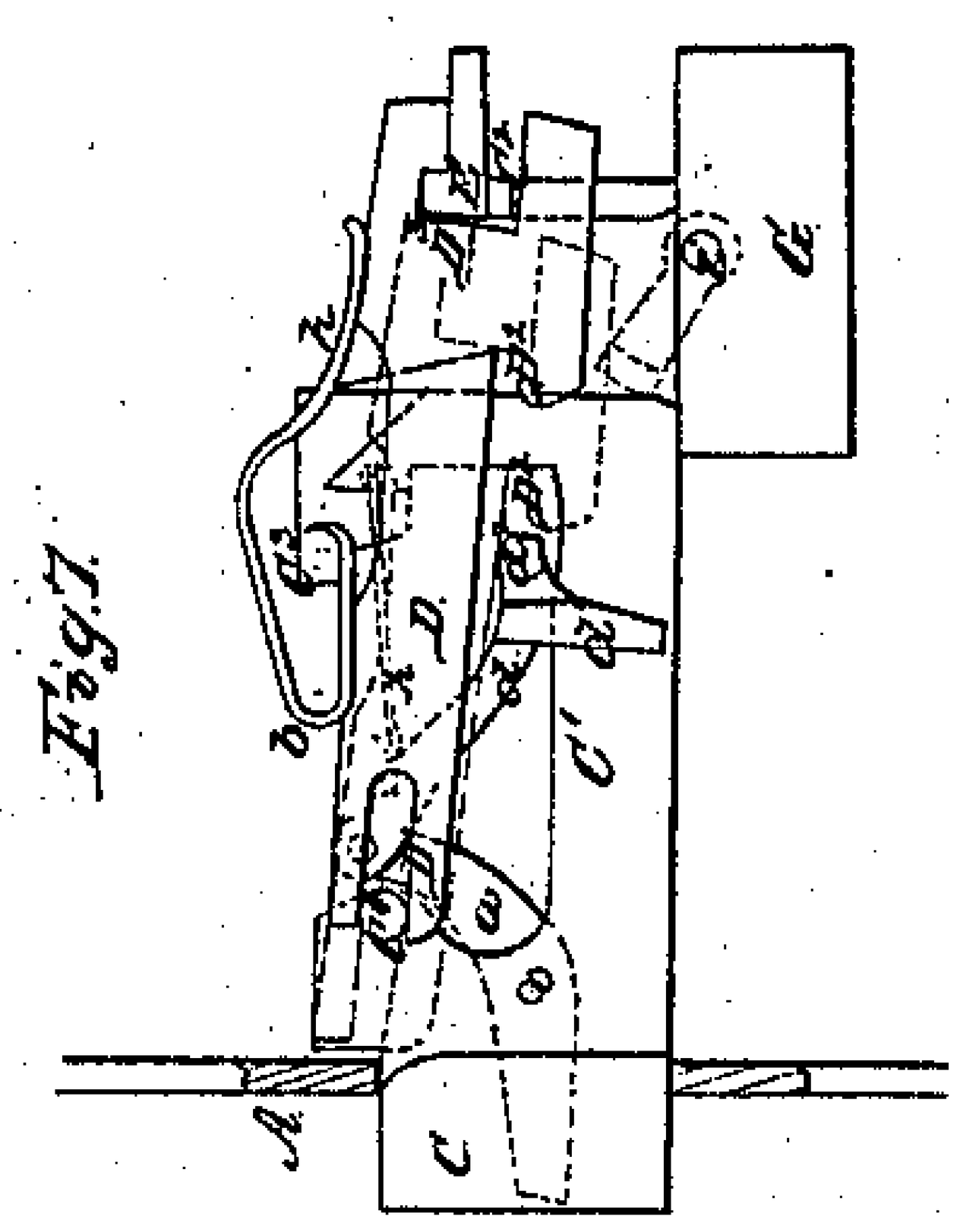
Fig. 7.

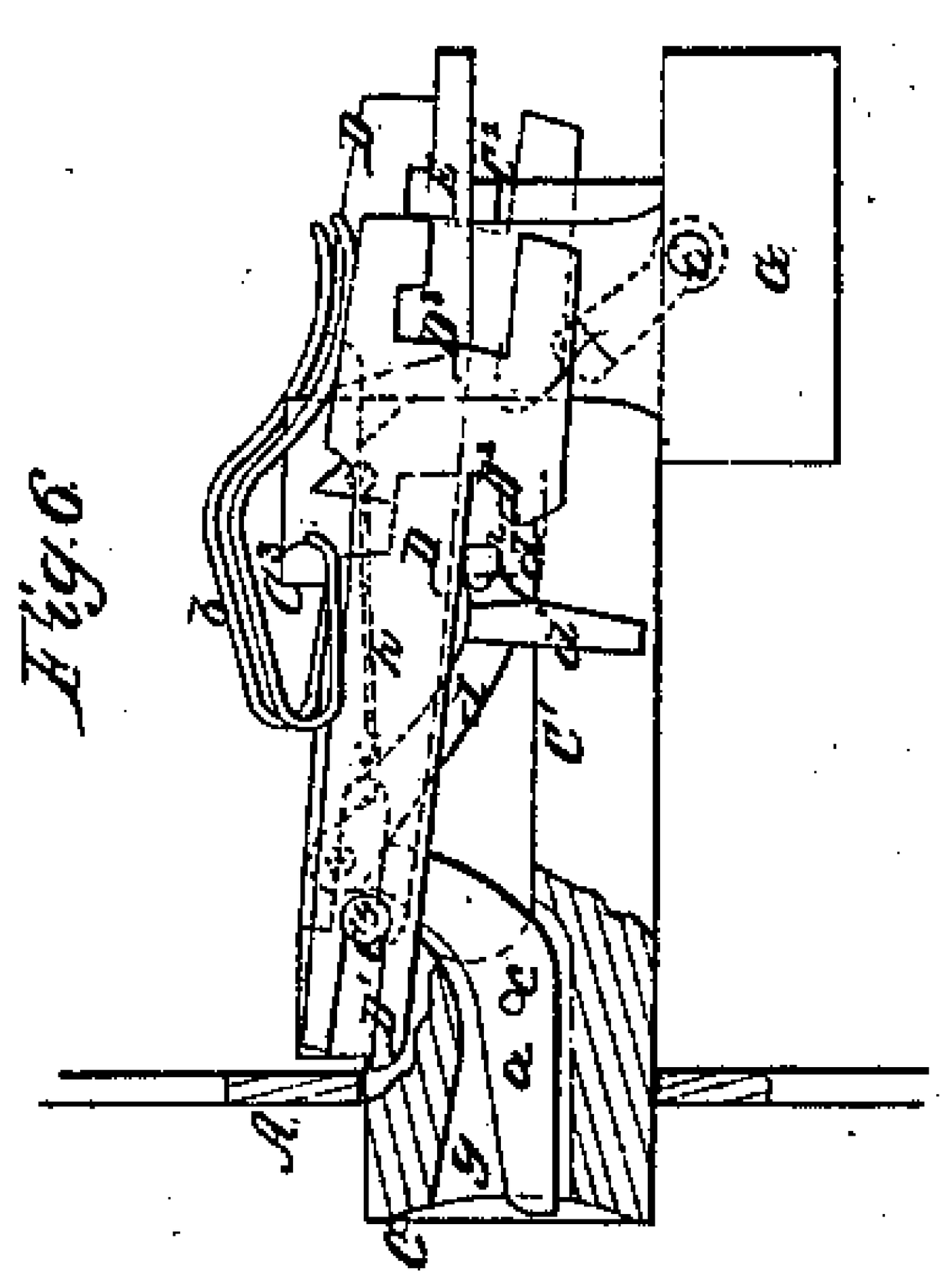
Fig. 6.

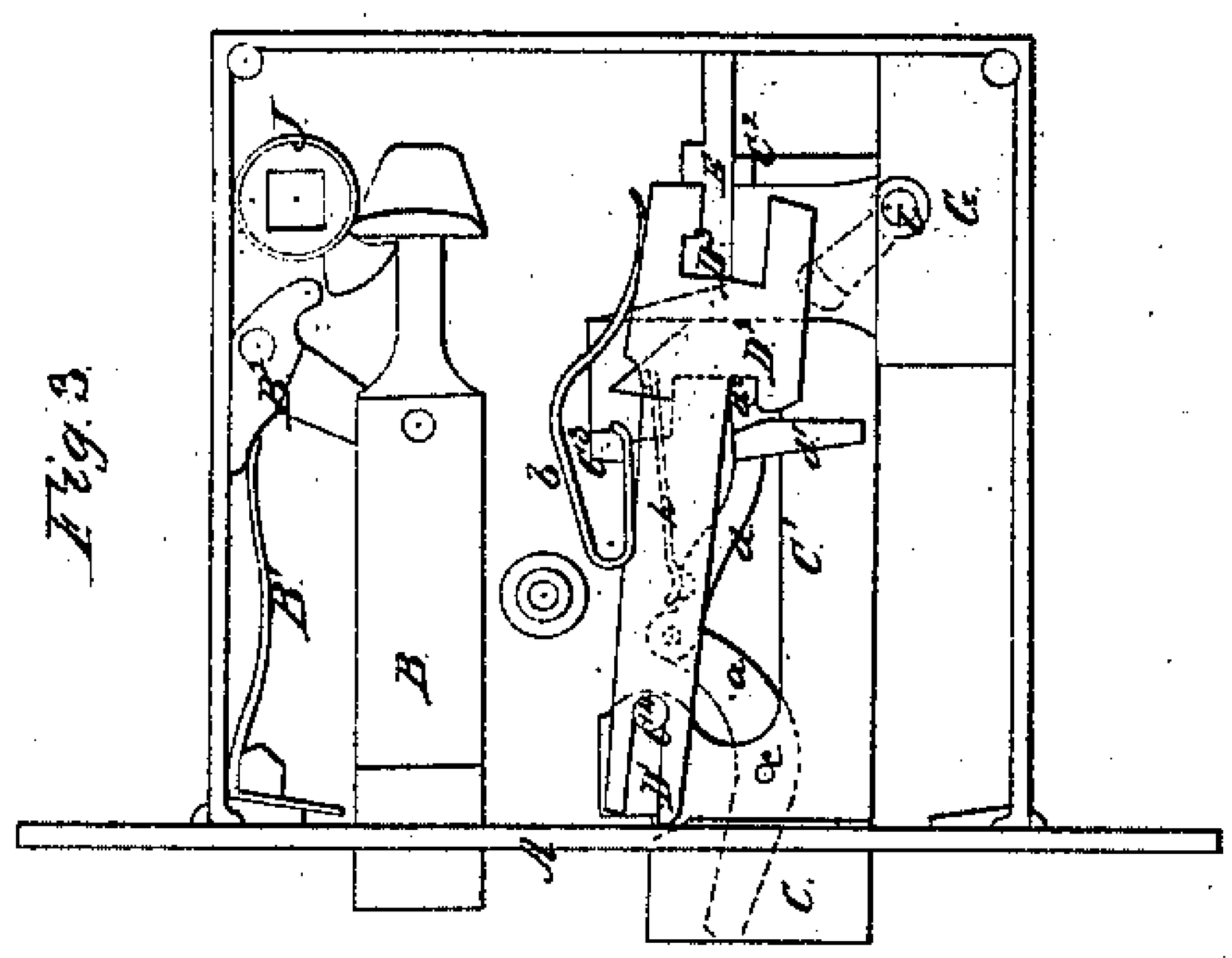
Fig. 3.

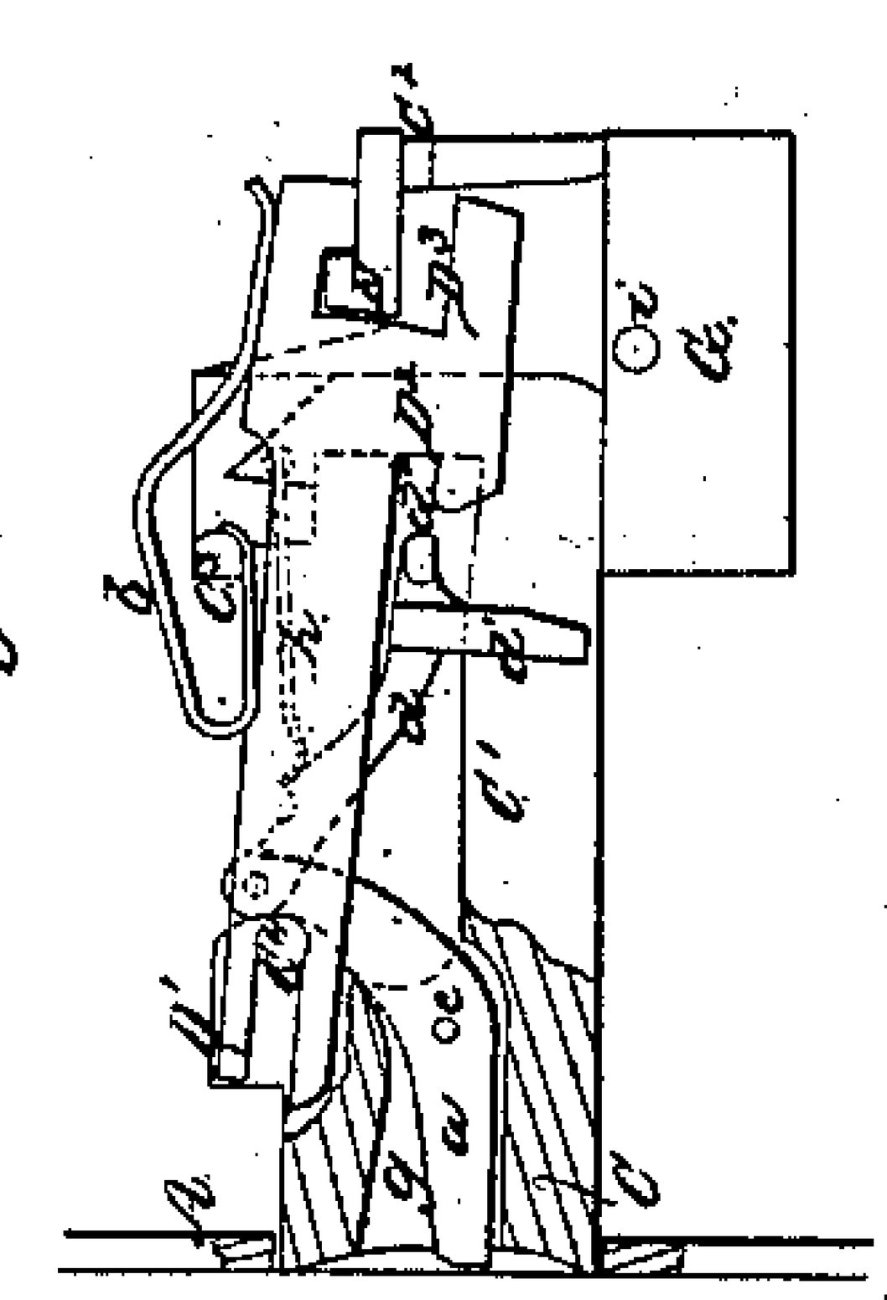
Fig. 5.

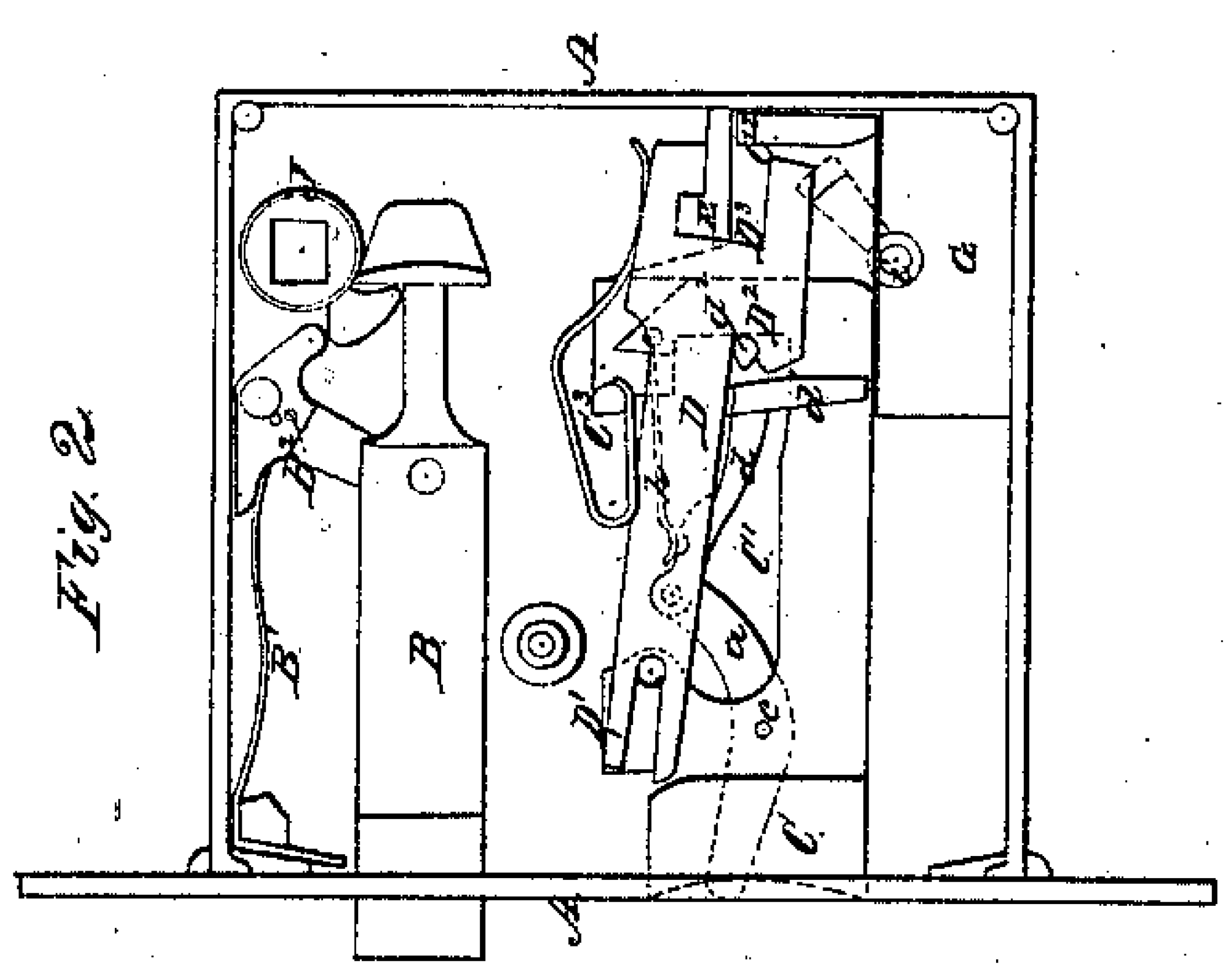
Fig. 2.

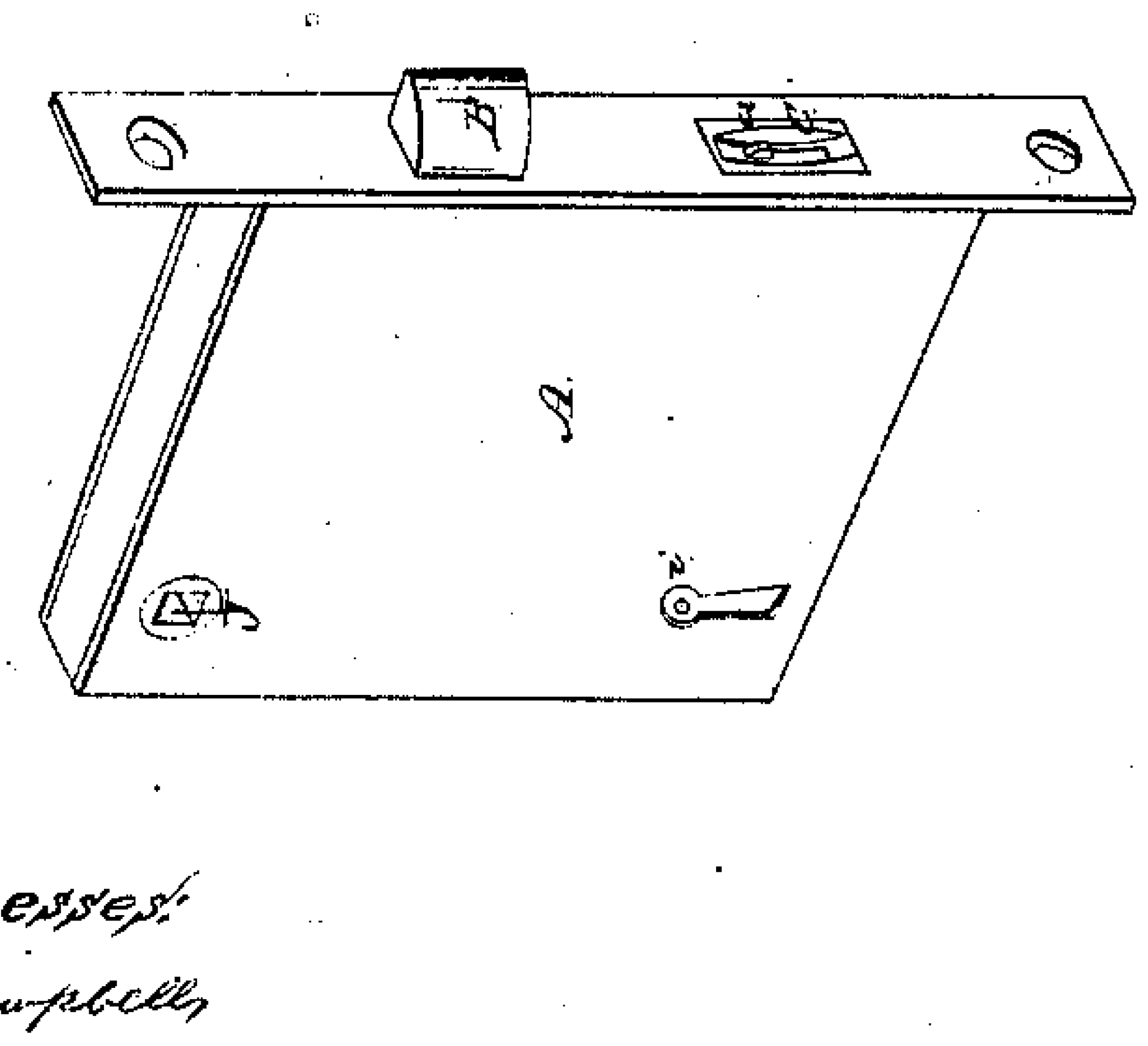
Fig. 1.

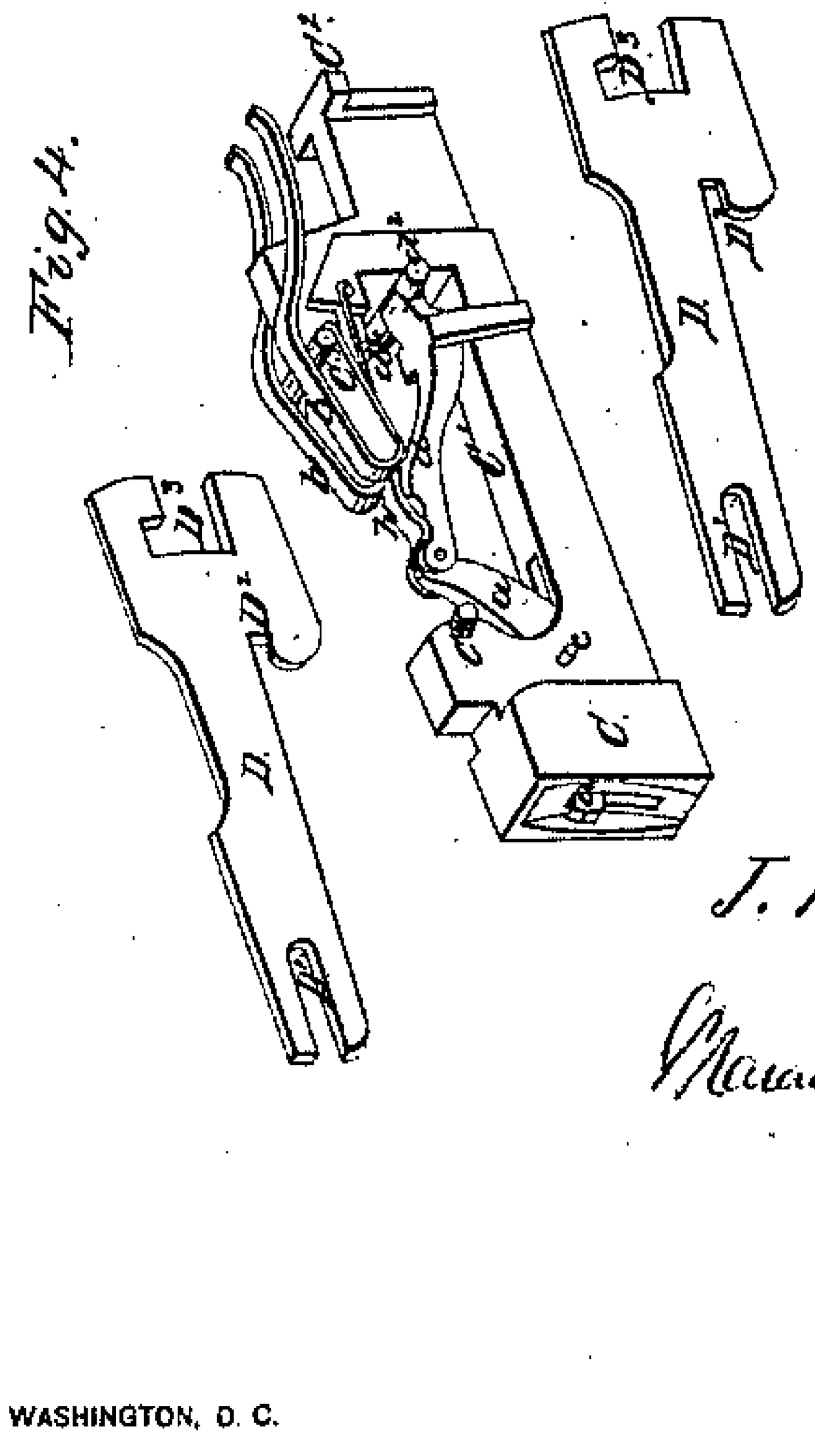
Fig. 4.

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United States Patent Office.

JACOB BEHEL, OF ROCKFORD, ILLINOIS.

Letters Patent No. 74,283, *dated February* 11, 1868.

IMPROVEMENT IN DOOR-LOCKS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JACOB BEHEL, of Rockford, in the county of Winnebago, and State of Illinois, have invented certain new and useful Improvements on Locks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a mortise-lock having my improvements applied to it.

Figure 2 is a view of the interior of the lock as seen by removing one of the case-plates. The bolt is shown retracted.

Figure 3 is a similar view of the same parts, showing the bolt shot out.

Figure 4 is a perspective view in detail of the two tumblers with the bolt and its attachments.

Figures 5, 6, and 7, show the bolt and the several parts immediately connected therewith in different positions.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to so construct locks for doors that they can be locked or unlocked from either side, by using the proper key, precisely like the ordinary locks, and, when desired, they can be readily adjusted, so that when locked from one side they cannot be unlocked from the opposite side, thereby producing locks which can be converted from simple locks to burglar-proof locks at pleasure, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe one practical mode of carrying it into effect.

In the accompanying drawings, I have represented my invention applied to a mortise-lock, but do not confine myself to this form of lock, as it is applicable, with slight changes, to other forms and kinds of locks. C represents a rectilinear sliding bolt, which is constructed with a longitudinal recess, *g*, through its front or locking-end, with a slight depression in the end, as shown in figs. 1, 4, 5, and 6. This recess or slot *g* receives a curved lever, *a*, which is pivoted to the bolt at *c*, and projected forward so that its front end can be moved up or down with the fingers. The rear upturned end of lever *a* is pivoted to a latch, *d*, which is constructed with two transverse studs, d^2, on its rear end, and also with forks, d^1, projecting down from it, and striding the reduced portion C^1 of the bolt. The projections d^1 serve to connect the latch *d* to the bolt, so as to prevent lateral displacement, but allow of a free longitudinal movement. The bolt C is provided with two peculiarly-shaped tumblers, D D, both of which are alike in shape and size, as clearly shown in fig. 4. One tumbler is fitted to work on one side of the bolt, and the other tumbler is applied on the opposite side of the bolt, to work, at certain times, in harmony with the one first mentioned. The reduced forward portions of the tumblers have slots, D^1, made through them, which receive studs, C^4, formed on the sides of the bolt. The rear enlarged portions of the tumblers are constructed with hooked slots, D^3, in them for receiving and hooking over a fixed ledge, E, upon the lock-case, as shown in figs. 2, 5, and 7. The rear edges of the two tumblers are curved concentrically to their studs C^4, so that the tumblers will play closely about the fixed piece E in locking and unlocking the bolt. Another slot, notch, or hook, D^2, is made in each tumbler for receiving the studs d^2 upon the rear end of the sliding latch-piece *d*, as shown in figs. 2 and 3, wherein the parts are arranged to be operated, *i. e.*, locked or unlocked by a key applied to either side of the lock. The notches D^2 being directly opposite and in line with each other when the bolt is shot back, it will be seen that the studs d^2, of latch *d*, will be received by both of said notches when the lever *a* is raised, as shown in figs. 2 and 3, but when the front end of lever *a* is depressed, as shown in figs. 5, 6, and 7, the studs d^2 of the latch are moved forward out of the notches D^2 in the tumblers. In the first instance mentioned, wherein lever *a* was described as being raised, both tumblers will move together about the axes of their respective studs C^4, and also move back and forth with the bolt when acted upon by a key. In the last instance, where the lever *a* was described as depressed, the latching-studs d^2 do not restrain the movement of either one of the tumblers.

The latch-piece *d* is held down in place by means of a spring, *h*, so constructed and applied to a rear elevated portion of the bolt as to safely arrest the latch when it is in either a forward or backward position. The tumblers D D are pressed upon by two forked ends of a spring, *b*, which is secured to studs, C^3, upon the elevated portion of the bolt, as shown in the drawings. This spring *b* acts at two points, forward and in rear of its

point of attachment to the bolt, its forward end pressing upon that portion of the upper edge of each tumbler which is curved out, as shown in figs. 2 and 3. By this application of the spring, the bolt cannot be casually thrown forward by the sudden slamming of a door having the lock upon it.

The bolt is arranged centrally over a division guard-plate, G, upon the lock-plates or case, and a slot is made vertically in the rear part of the bolt, on each side thereof, for the key, which slot leaves shoulders against which the key acts to move the bolt back and forth. The key used has a hollow barrel, which is received by the studs *i* projecting from both sides of the fixed guard-plate. When the key is inserted into the lock and turned, the latch *d* being in the position shown in figs. 2 and 3, the first movement will raise both tumblers free from the fixed hook E, and the second movement will shoot out the bolt, as shown in fig. 3. A reversal of these movements unlocks the bolt and returns the tumblers to the position shown in fig. 2. When the latch *d* is in the position just described, the bolt can be moved by means of the key from either side of the lock-case.

To convert the parts into a burglar-proof lock, it is only necessary to depress the front end of the lever *a*, as shown in figs. 5, 6, and 7, previous to shooting the bolt, which moves forward the latch *d*, and leaves the tumblers D D free to be moved independently of each other by a key inserted into the lock-case on one side or the other of the guard-plate G. A key being inserted on one side of the guard-plate G, and turned, the tumbler D on this side of the bolt will operate with the bolt, but the tumbler on the opposite side of the guard or bolt will remain stationary upon the holding-piece E, and will be firmly locked down in place, so that it cannot be raised by a key or other device, by means of a projection, C^2, of the bolt entering the recess D^3. Fig. 6 shows the parts as they appear when the bolt is shot out by a key inserted on one side of the guard G, and fig. 7 shows the parts as they appear when the bolt is locked or shot out from the opposite side.

Instead of recessing the rear sides of the bolt, as shown, for receiving the key, and allowing the latter to move the bolt by acting directly upon it, the tumblers may be made with recesses for receiving the key, so that the key will operate to move the bolt through the medium of the tumblers, thus admitting of the use of more than one tumbler on each side of the lock without increasing the size of the lock.

The lock-case which I have shown in figs. 2 and 3, contains a latch, B, which is so constructed that it can be reversed in the case, and arranged so that its bevelled latching-nose will serve for right or left-hand doors. The spring B^1, which presses out the latch B, acts upon this latch through the medium of an oscillating-dog, B^2, which plays about a stud upon the lock-case, and which is pivoted to the latch in front of its rear shoulders, as shown in the drawings. The spindle-hub J has a cam projecting from it which works between the shoulder of the latch and the dog B^2, so that the latch can be retracted by turning the hub J either to the right or to the left. This arrangement makes a very simple and durable latch, and one which is easily worked.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The application of tumblers to the bolt of a lock in such manner that while the bolt can be operated from both sides of the lock-case, this bolt can only be unlocked from that side of the case from which it was locked, substantially as described.

2. Providing a lock with tumblers and an exposed latch-lever, so arranged that the bolt can be locked and unlocked from both sides of the lock-case, and, when desired, so adjusted that it can be locked from either side of the case, but unlocked only from that side of the case from which it was locked, substantially as described.

3. The twin tumblers D D applied to a bolt, C, in combination with a latching-device which is so arranged that the tumblers can be connected together or disconnected from each other, at pleasure, substantially as described.

4. The key-guard G with its key-studs *i* arranged centrally with respect to the bolt C and its twin tumblers D D, in conjunction with a device which will admit of said tumblers being connected together or disconnected, at pleasure, substantially as described.

5. The combination of the spring B^1, lever B^2, and hub J, with the reversible latch B, constructed and arranged substantially as described.

JACOB BEHEL.

Witnesses:

BENJAMIN SNEATH,

JAMES WOOD.