(No Model.)

F. O. MILLER.

GRAVITY LATCH.

No. 495,824. Patented Apr. 18, 1893.

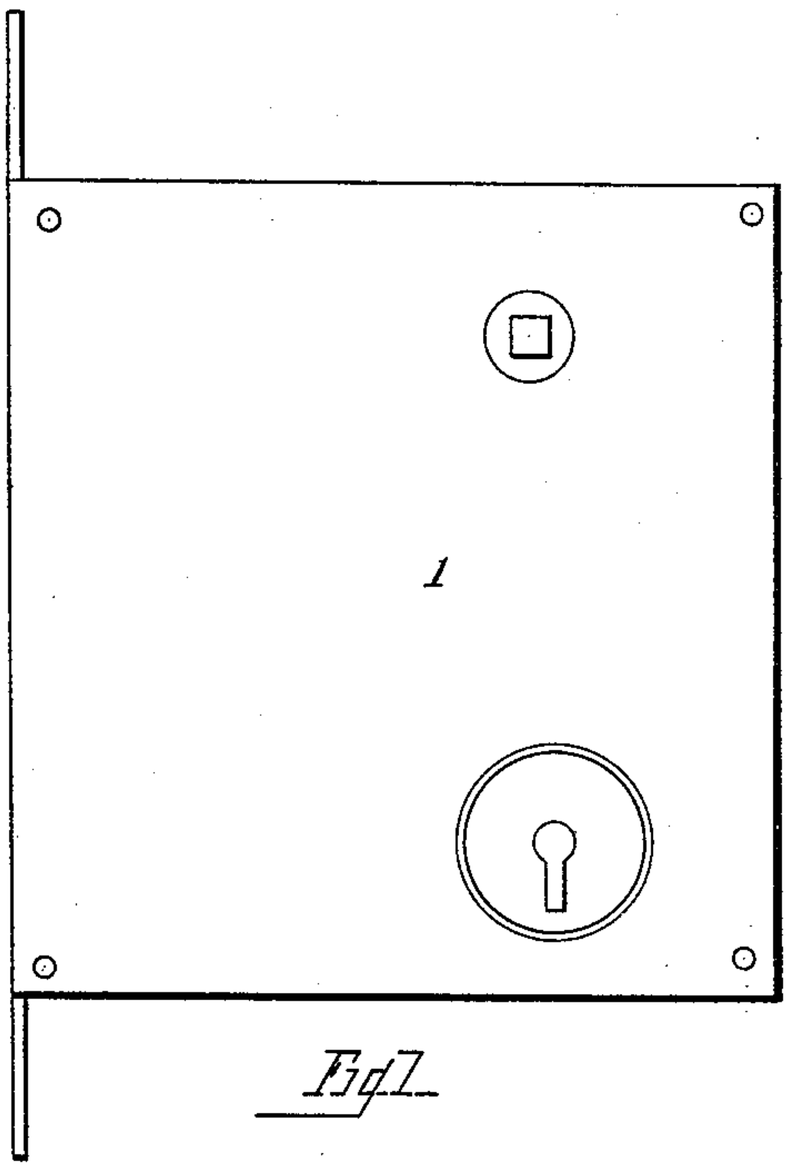

Fig. 1.

Fig. 2.

Fig. 3.

WITNESSES.

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FREDERICK O. MILLER, OF TOLEDO, OHIO, ASSIGNOR OF ONE-FOURTH TO JOHN B. STUART, OF SAME PLACE.

GRAVITY-LATCH.

SPECIFICATION forming part of Letters Patent No. 495,824, dated April 18, 1893.

Application filed July 6, 1891. Serial No. 398,502. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK O. MILLER, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Locks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention relates generally to locks, and particularly that class thereof in which weighted portions are employed instead of springs, and it is the object of my invention to provide certain novelties of construction whereby the lock is greatly simplified, and at the same time rendered positive in operation.

The invention consists in the parts and combination of parts hereinafter described and pointed out in the claim.

In the drawings, Figure 1 is a side elevation of the lock. Fig. 2 is a similar view with the front plate of the lock removed to disclose the working parts of the lock, and Fig. 3 is a vertical longitudinal section on lines *x x* Fig. 2, showing the relative positions of the catch and rocking lever, locking bolt and tumbler.

In the use of springs in locks, especially those secured to doors in which the lock is subjected to the dampness of the atmosphere, the springs are liable to become rusted and worthless, and in all constructions where springs are employed, they are liable not only to loose tension, but to become displaced or broken. It is also evident in the construction of locks in which springs are employed, that there must necessarily be a complexity of parts in order to provide for properly securing the springs in place. It will also be apparent that in securing the tumbler to the locking bolt instead of to the case of the lock, the possibility of becoming displaced one with relation to the other is removed.

In the construction described is employed a weight or weights which bear directly upon the catch with a uniform pressure, thereby causing the catch to work freely and positively at all times, and so connect the tumbler and bolt that they work in unison.

1, designates the lock, composed of the casing 2, which may be of any form preferred.

3, designates the catch-bolt, upon the outer end of which is the catch 4, the opposite end being forked forming the arms 5, the inner ends of which are provided with heads or enlargements 6, against which the arms 7 of the rocking lever 8 bear.

To insert the catch-bolt 3, the catch 4 is first inserted in the opening 9 of the lock, the lower arm 5 resting upon pin 10 secured to the casing 2. Rocking lever 8 is then placed in position and spindle 11 is inserted, thereby holding the parts in operative position.

12, designates a weight pivoted to the case at 13, which is provided with an arm 14, which bears against the lug 15 on catch-bolt 3.

16 designates, a supplemental weight pivoted at 17 an arm 17′ of which bears against the head 6 on the lower fork 5, the operation of which will be hereinafter described.

18, designates the locking-bolt which is held in position by the lug 19 at its lower side and the lug 20 on its upper side.

To the bolt 18 is pivoted the tumbler 21 at 22. Tumbler 21 is preferably formed of three parts although it may consist of less or more to allow of employing a key with any desired number of wards. At the outer and upper end of the tumbler is the enlarged weighted ends 23 which tend at all times to cause the recesses 24 and 25 communicating with slot 26 to fall over the lug 20 and hold the bolt fixedly shut or closed.

27, designates a notch formed in the bolt, the sides of which are engaged by the key to operate the bolt.

Having described the several parts of my invention I will now proceed to describe the operation. To operate the catch, the knob is turned and consequently the spindle 11, thereby operating the rocking lever, which on account of the two arms 7, heads or enlargements 6 and levers 5 operate when turned from either direction and draw the catch-bolt and consequently the catch back, when upon the operator releasing the knob, the weights 12 and 16 bearing upon the lugs 15 and 6 through the medium of levers 14 and 17′ throw the catch out in position. To lock the door, the key is inserted and in turning, first

strikes the lower side of the tumbler raising the same and withdrawing lug 20 from the recess 24. A further revolution of the key striking the side of notch 27 throws the bolt its required distance when the weight 23 will cause the lug 20 to engage with recess 25, thereby locking the bolt in its locked position, the reverse of which movement will withdraw and lock the bolt in its position as shown.

It will be seen that the device is simple in construction and positive in operation, and that there are no parts to become inoperative or broken by reason of tension thereon, as in the case of springs.

What I claim is—

In a lock, the combination with a casing of a latch arranged to slide therein, said latch having projections produced upon its inner end and intermediate its ends, a weighted lever adapted to contact with the projection intermediate the ends, a weighted lever adapted to contact with one of the perforations upon the inner ends, and a rocking lever adapted to contact with both the projections on the inner end.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

FREDERICK O. MILLER.

Witnesses:
WILLIAM WEBSTER,
CARROLL J. WEBSTER.