

United States Patent Office.

FRANZ PROCKERT, OF NEW YORK, N. Y.

Letters Patent No. 97,227, dated November 23, 1869.

IMPROVED LOCK.

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, FRANZ PROCKERT, of New York city, in the State of New York have invented certain new and useful Improvements in Door-Locks; and I do hereby declare that the following is a full and exact description thereof.

I will first describe what I consider the best means of carrying out my invention, and will afterward designate the points which I believe to be new therein.

The accompanying drawings form a part of this specification.

Figure 1 represents the lock in condition for ordinary use as a latch-bolt.

Figure 2 represents the lock in its locked condition.

Both figures show the works of the lock as they appear when the front plate is removed.

Similar letters of reference indicate like parts in all the figures.

A is the casing of the lock, made of malleable cast-iron, or other suitable material, and adapted to be constituted a complete casing and protection by the addition of an ordinary covering-plate or front plate, not represented, which latter has a key-hole, as usual, adapted to the form of the key. There is nothing peculiar about the casing.

B is a bolt, which serves the double purpose of a latch-bolt, for ordinary use, and of a locking-bolt, for safely securing the door, as will be described further on.

C is a knob-shaft, extending through the lock and through the door, and carrying a knob at each end, as usual.

It is square, and fits in a square hole in the hub D, which is provided, with a single arm, D', adapted to act against a corresponding arm, B', on the bolt, and withdraw the bolt, when a sufficient force is applied, unless the tumblers are in position to prevent such movement.

The inner end of the bolt B is held in position by a link, E, which turns on a pivot, e, and is acted on by a spring, F, tending to move the link, and, consequently, to throw the bolt always into its extreme outermost or locked position.

G is what I term a cam-lever. It is hung on a pivot, g, and is adapted to stand in a notch in the back side of the bolt B.

When the cam-lever G is lifted by the action of the key, which turns around on the pin h, it acts against a shoulder on the back of the bolt B, and draws the bolt into the casing against the force of the spring F.

There is a series of tumblers, M, mounted side by side, and differing in their form, as usual. They are all hung on the same pin g, and are all adapted to be lifted, by the key, to different heights, performing, so far as yet described, the functions common to tumblers in locks.

My arrangement provides more room for the tumblers than is usual in locks of this size, and I can use a great number, by making the tumblers thin, and employing sufficiently fine workmanship. The number I prefer, for good locks, is about six.

A lever, I, turning on a pivot, i, in the casing, is acted on by the spring F, before described, and presses against the tumblers in the position represented, so as to tend to throw them all down into their extreme lowermost position. Ordinarily, the gravity of the tumblers may suffice for this purpose, but the addition of the lever I makes the action more certain.

The stud or pin b, which acts against the tumblers, is rigidly connected to the bolt B by the thin arm B², which slides back and forward in the thin space behind the tumblers, as will be obvious.

There is a large rectangular hole in each tumbler, as indicated by M¹, and a smaller rectangular hole, as indicated by M². These apertures are nearly divided by a narrow but sufficiently strong bar, which extends nearly across, but is interrupted by a narrow aperture, marked m, through which the stud b can move freely, when the tumblers are all lifted by the key, or by other means, into exactly their right positions, to allow of locking or unlocking.

J is what I term an adjusting-piece. It presents a broad surface, sliding in the thin space behind the tumblers, and has one arm, which extends forward under all the tumblers, so that when the piece J is lifted, it lifts all the tumblers to their respective positions, which allows the lock to be locked or unlocked, and when it is lowered, it allows the tumblers to descend to their respective lowest positions.

There is an arm which extends also upward from this plate J, through a slot, j, in the back of the casing, and this allows the adjusting-piece to be operated by the hand of a person within the building.

When the lock is in the ordinary condition, (that shown in fig. 1,) it serves as an ordinary latch-bolt. By turning the knob-shaft, from either side of the door, the bolt B is withdrawn, and the door is opened, and the bolt again immediately resumes the position shown in the figure. In this manner the lock will serve, during the day, and at all ordinary times, as a latch-bolt.

When it is desired to lock the door securely, the necessary change in the lock may be effected from the inside of the door, or the interior of the building, by adjusting the tumblers by the adjusting-piece J, or it may be effected from the exterior of the door by the aid of the proper key. Either turning the proper key in the right direction, or raising the adjusting-piece J, lifts the tumblers, and sets them so as to bring all the little apertures m in line with the stud b. In this condition the bolt B is thrown by the spring F into its double outermost position. Now, the adjusting-piece

being lowered, or the key withdrawn, the tumblers immediately fall into their lowest position, and the door is firmly locked, the parts being now in the position shown in fig. 2. The bolt cannot now be withdrawn by acting on the knobs. It can be unlocked, however, by means of the key, turning it in the proper direction. It can be unlocked also from the inside of the door, by simply taking hold, with one hand, by the knob, and gently turning it, to induce a sufficient pressure, and then raising the tumblers by the adjusting-piece J.

I am aware that tumblers, acting on the principle of mine, have been before combined with a knob-device, cam-lever, and spring, in connection with a bolt adapted to be thrown out to two different distances, according as it is thrown out with or without setting the tumblers; and I am also aware that an adjusting-device has been before used to set the tumblers of night-latches so that the stump of the bolt may move freely through their notches; these, therefore, in themselves, I do not claim.

Having now fully described my improvement,

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a door-lock, in which the bolt is thrown to two different distances, a series of tumblers in combination with an adjusting-piece, J, for setting the tumblers, to allow the locking or throwing of the bolt B into its secondary or double outermost position, all substantially as and for the purposes herein set forth.

2. The tumblers M M¹ M² m, adjusting-piece J, cam-lever G, acting-spring F, and knob-device D D', combined and arranged as represented, relatively to each other, and to a bolt, B B¹ B², adapted to be thrown out to two different distances, according as it is allowed to move out with or without setting the tumblers, all substantially as and for the purposes herein set forth.

In testimony whereof, I have hereunto set my name, in presence of two subscribing witnesses.

FRANZ PROCKERT.

Witnesses:

WM. C. DEY,

A. HOERMANN.