(No Model.) 2 Sheets—Sheet 1.

J. KAYE.

SLIDING DOOR LOCK.

No. 600,584. Patented Mar. 15, 1898.

Fig. 3.

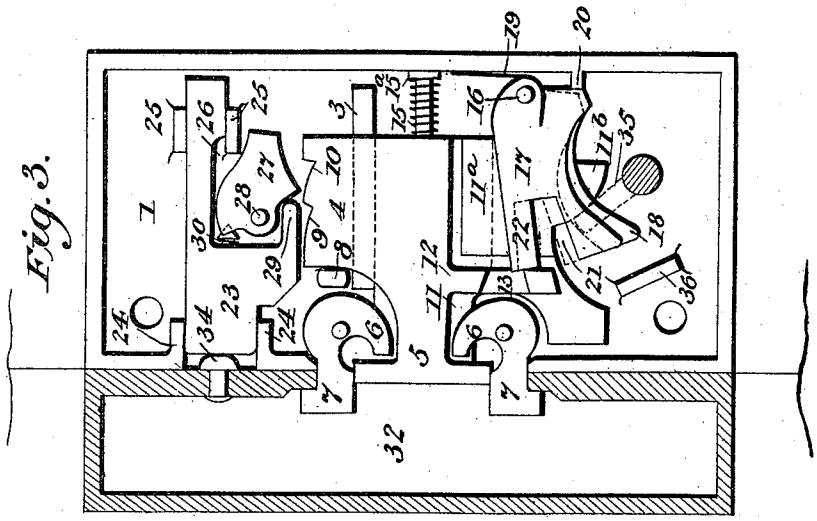


Fig. 1.

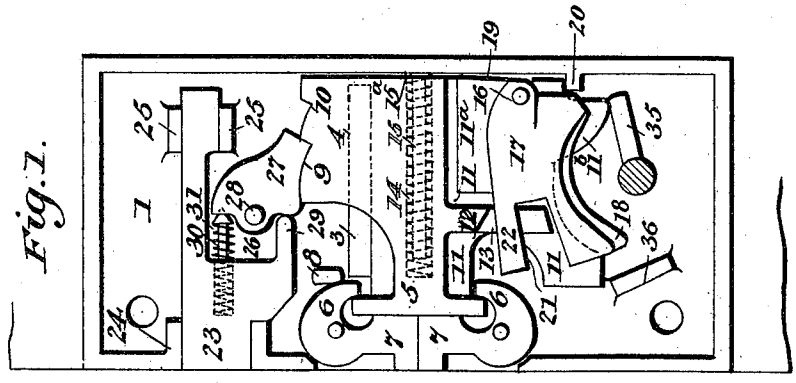
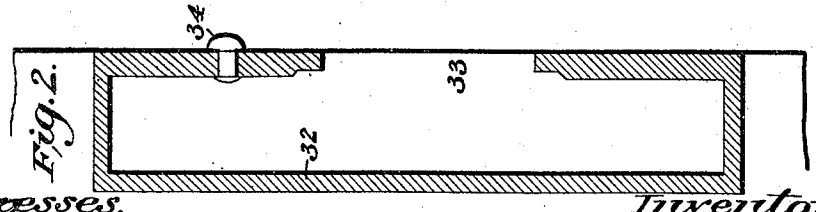


Fig. 2.



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

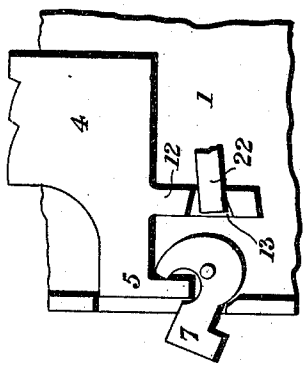


Fig. 5.

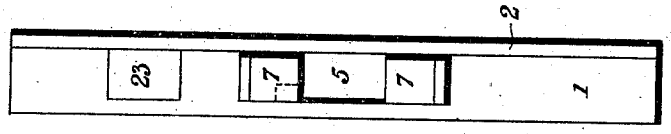
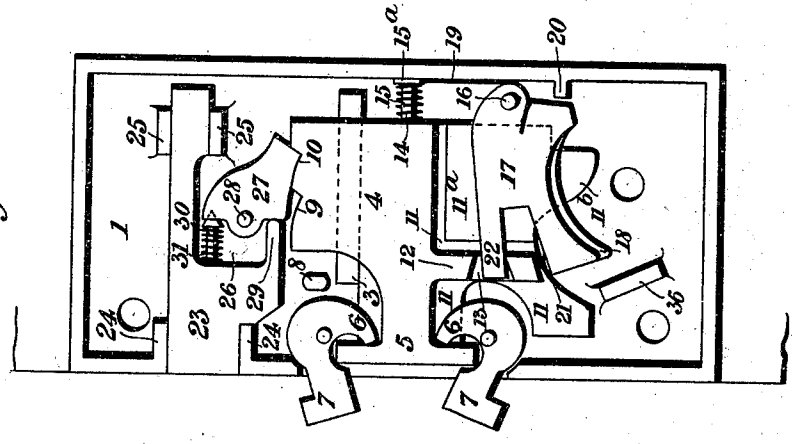


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOSEPH KAYE, OF LONDON, ENGLAND.

SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 600,584, dated March 15, 1898.

Application filed October 25, 1897. Serial No. 656,289. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH KAYE, a subject of Her Majesty the Queen of Great Britain, residing at London, England, have invented a certain new and useful Improvement in Locks for Sliding Doors, of which the following is a specification.

My invention relates to an improvement in the locks such as used for sliding doors or gates, or doors or gates abutting against each other or against a fixed part or post—such, for instance, as the doors or gates of elevator wells or cars—though the invention is adapted for locking other abutting parts than doors.

The object of my invention is to provide a lock which while making the door or part secure will have no projection either on the lock or striking-plate when the locking part or parts which serve the same purpose as the ordinary bolt are withdrawn for the purpose of allowing the gate, door, or the like to be opened, and to provide means by which the locking parts are automatically operated by the closing of the gate, door, or thelike and held in the locked position until released by a key, as well as means for retaining the locking parts immediately the gate, door, or the like is released for the purpose of preventing them slipping back into the locked position and thereby getting bent or broken.

In the accompanying drawings is illustrated one form of lock constructed according to my invention.

Figure 1 is an elevation of the lock with the cover-plate removed. Fig. 2 is a sectional elevation of the striking-plate. Fig. 3 is an elevation of the lock and striking-plate engaged or locked, the latter being in section. Fig. 4 is an elevation of the lock with the parts in a different position from that shown in Fig. 1. Fig. 5 is an edge view of the lock in the position shown in Fig. 4; and Fig. 6 is an elevation of a portion of a lock, showing a modification.

The lock shown in Figs. 1 to 5 consists of a box portion 1, provided with a suitable cover-plate 2, which is shown in Fig. 5. On the back or plate portion is cast a rib 3, which acts as a guide for the bolt 4, so that it will preserve a line in moving to and fro. The plate portion also has a stop 8 cast thereon to limit the forward movement of the bolt. The bolt 4 has a T-shaped head 5, which engages with the hooked ends 6 of pivoted catches 7, having notched outer ends, as shown, which are capable of being projected through a slot in the edge of the box.

The bolt 4 has notches 9 10 on one side and on the other a portion 11, having a surface on a lower plane than the main surface of the bolt, a part 11^a of which is machined to provide a smooth face. The part 11 has also a shoulder 11^b. The bolt has also a rib 12 with a slot 13 formed therein and a hole in which is contained a spiral spring 14, guided and supported by a rod 15, the head 15^a of which abuts against the back edge of the box.

Pivoted on a pin 16 are two or more tumblers 17 18, the shape and number of which are determined by the wards of the key. Each is controlled by a bent spring 19, (one only is shown,) one end of which is secured in a slit in the tumbler, while the other bears against the back edge of the box. Each tumbler has also a shoulder which abuts against a projection 20, cast with the back edge of the box, which forms a stop. The tumblers rest and move upon the surface 11^a of the bolt and are slotted at 21, so that the part 22 is formed, which is of a size capable of passing through the slot 13 of the rib 12. On the other side of the bolt is a lever or trigger-piece 23, which is guided by earpieces 24 24, cast with the front edge of the box, and by lugs 25 25, cast on the back or plate portion. The lever or trigger is recessed at 26 to receive a dog 27, pivoted at 28, such recess 27 leaving a projection 29, adapted to strike a shoulder of the dog. The dog is controlled by a spring 30, supported by a pin 31, which, together with the spring, can pass into a hole in the lever or trigger, the other end of the pin having a conical head, which bears on one side of the dog.

The striking-plate may be of any suitable form. As shown, it consists of a box portion 32, having a slot 33 therein and a stud 34 projecting from the face. 35 is the key, and 36 a lug to assist in supporting the cover-plate.

The operation of the lock is as follows: As soon as the striking-plate is brought up against the lock when in the unlocked position shown in Fig. 1 the stud 34 strikes the lever or trigger 23 and through the projection

29 releases the dog 27 from the notch 9 of the bolt, so that the spring 14 is enabled to drive forward the bolt, the head 5 of which forces out the catches 7 7, so that they enter the slot 33 of the striking-plate, the notches in said catches engaging with the edges of the slot. During this movement the bolt has carried the rib 12 away from the tumblers 17 18, the springs 19 of which are thus able to partly turn them, so as to bring the part 22 out of line with this slot 13 and into line with the solid portion of the rib, so that the bolt cannot be forced back from the outside of the lock, the parts being then in the position shown in Fig. 3. The head 5 of the bolt abuts against the side of the catches and effectually locks them in position. To unlock the parts, the key 35 is turned to lift the tumblers 17 18, thereby bringing them into line with the slot 13, and the continued movement of the key acting on the shoulder 11^b of the bolt withdraws it, the head 5 pulling on the hooked ends 6 of the catches and turning them inward into the position shown in Fig. 1.

In Fig. 4 the parts are shown in a position obtained when the dog engages with the first notch 10 of the bolt. This is provided for the purpose of retaining the hooked catches 7 7 immediately the door or gate is released, so that the catches are not so likely to be bent or broken as they would be if allowed to slip back into the locked position. Were this notch 10 not provided, the catches would come into the locked position and the gate could not be fastened or locked without first withdrawing them by the aid of the key, while if the catches were out when the door was unlocked there would be a tendency for the striking-plate to break them, as they could not get into the opening 33 as they can when in the position shown in Fig. 4.

It will be evident that in place of two catches, such as 7 7, one only may be employed, such catch being operated and locked by the head 5 in the manner above described. This arrangement is shown in Fig. 6.

What I claim is—

1. In a lock, and in combination, a pair of catches having hooked ends, a bolt, a spring for operating same, a head carried by the bolt adapted to engage with the hooked ends of the catches so as to operate said bolt outwardly and inwardly, the head in its extreme forward position being flush with the face of the lock and abutting against the catches to keep same from moving, a striking-plate, means for automatically releasing the bolt to allow it to project the catches forward to engage the striking-plate and means for unlocking or withdrawing the bolt substantially as described.

2. In a lock and in combination a bolt, hooked catches operated thereby both outwardly and inwardly, a lever or trigger-piece having a portion exposed from the outside of the lock, means operated by the lever or trigger for holding and releasing the bolt, a spring for projecting the bolt forward and a key for withdrawing same, and a striking-plate with which the catches engage and which is adapted to operate the lever or trigger substantially as described.

3. In a lock and in combination a bolt, hooked catches operated thereby both outwardly and inwardly, a notch in said bolt a pivoted dog adapted to engage therewith, a lever or trigger-piece having a portion accessible from the outside of the lock means carried by the lever for removing the dog from the notch and for returning it back into position to engage therewith, a spring for projecting the bolt forward and a key for withdrawing same and tumblers adapted to abut against the bolt when in its locked position to hold it from movement and to be removed from such position to enable the bolt to be withdrawn and a striking-plate adapted to operate the lever or trigger substantially as described.

4. In a lock and in combination hooked catches, a bolt adapted to operate same outwardly and inwardly, notches in said bolt, a dog adapted to engage when in different positions with one or other of the notches, a lever or trigger, means carried thereby for positively removing the dog from the notches, a spring carried thereby for replacing it, a striking-plate, means carried thereby for operating the trigger, and a spring for projecting and a key for withdrawing the bolt, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH KAYE.

Witnesses:
ALLEN PARRY JONES,
H. LOUIS CLARKE.