W. R. PRICE.

CABINET AND SHOW CASE LOCK.

APPLICATION FILED MAR. 16, 1908.

909,933. Patented Jan. 19, 1909.

Fig. 1

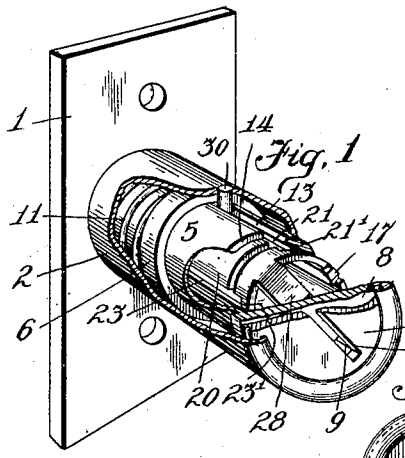


Fig. 2.

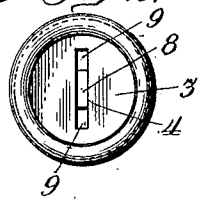


Fig. 4

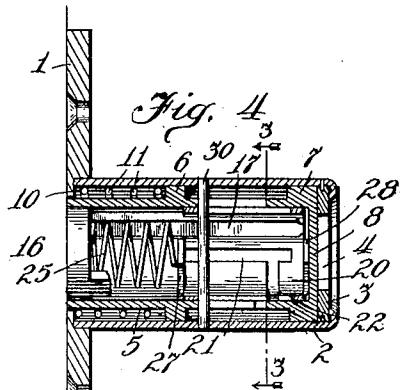


Fig. 7.

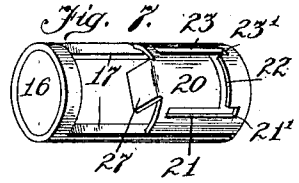


Fig. 3.

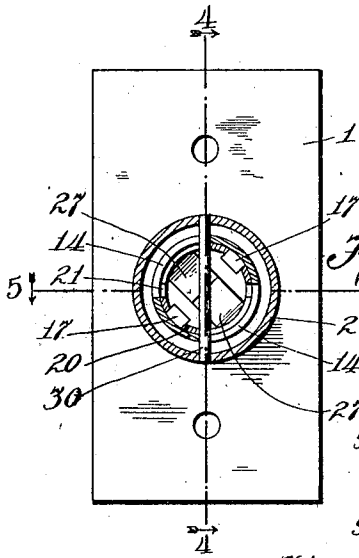


Fig. 5.

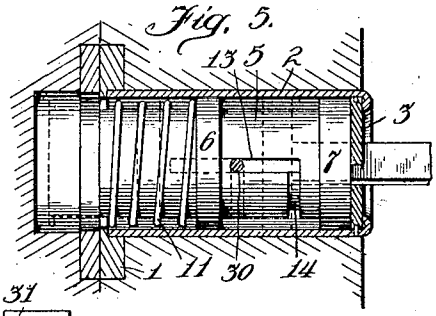


Fig. 8.

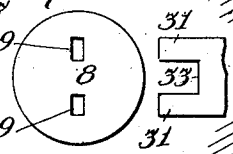


Fig. 6.

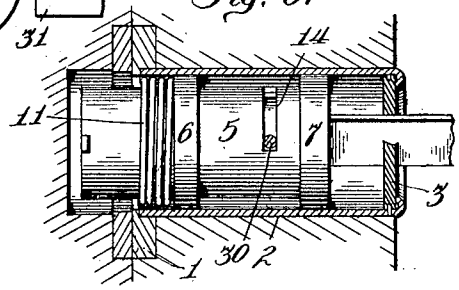
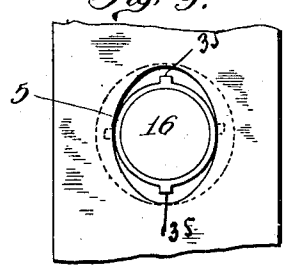


Fig. 9.



Witnesses
Milton Lenoir
A. B. Phillips

Inventor
William R. Price
By Warwick & Chamberlain
Attorney.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM R. PRICE, OF CHICAGO, ILLINOIS.

CABINET AND SHOW-CASE LOCK.

No. 909,933. Specification of Letters Patent. Patented Jan. 19, 1909.

Application filed March 16, 1908. Serial No. 421,559.

To all whom it may concern:

Be it known that I, WILLIAM R. PRICE, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Cabinet and Show-Case Locks, of which the following is a specification.

My invention relates to locks for use on show cases, cabinets, and the like, and it is especially designed for application to sliding doors in such a way that the bolt is projected through the stile upon which the lock is placed, and adapted to engage a corresponding stile or relatively stationary part of the case or cabinet. The doors of such cases are usually made with stiles which are so narrow that they will be weakened to the breaking point if any material portion is cut away, as would be necessary to provide them with locks of ordinary construction. And it is the object of my invention to provide a lock which is so small and compact that very little of the door material need be removed; which shall be simple and cheap to manufacture; which will be provided with a substantial bolt and secure tumbler construction, and which will readily lend itself to modifications in construction by which a large number of key changes may be made.

The principles of my invention are illustrated in the drawings, in which—

Figure 1 represents a perspective view, the case and various portions being broken away to show the internal construction; Fig. 2 is a front view of the tubular casing; Fig. 3 is a cross-section taken on the line 3—3 of Fig. 4; Fig. 4 is a vertical section taken on the line 4—4 of Fig. 3; Fig. 5 is a view on the line 5—5 of Fig. 3, showing the outer casing in section and the bolt in the unlocked position; Fig. 6 is a similar view showing the bolt in the locked position; Fig. 7 represents a tumbler and tumbler guiding device; Fig. 8 shows the key end of the bolt and a key therefor; Fig. 9 is a representation of the striker plate and locking end of the bolt.

Further describing my invention with reference to the drawings, in which like characters of reference denote like parts throughout: 1 is the face plate, and 2 the tubular casing of my improved lock.

3 is the plate having the key hole 4. The said plate is rotatable within the end of the casing, being secured there by any ordinary means.

5 is a hollow tubular bolt, provided with external peripheral flange 6 and having a similar flange 7 at the end, such flanges being adapted to guide the bolt within the casing. The flange 7 may be an extension of a head 8 which closes the end of the bolt, except for openings 9 through which may be inserted the projections on a key to engage the tumblers as hereinafter described. The face plate 1 is perforated to permit the bolt to pass through and the edge of the perforation in the face plate is grooved to form a seat for the casing, and defines a flange 10. A spiral spring 11 surrounds the bolt and, being inclosed between the ring 6 and the flange 10, normally holds the bolt in the withdrawn or unlocked position, as shown in Fig. 5. The bolt is also provided with longitudinal slots 13 on opposite sides thereof; and, extending at right angles therefrom and about ¼ around the bolt, are peripheral slots 14. Within the bolt is placed a device comprising a head 16 and arms 17. The head is adapted to close the outer or locking end of the bolt, and is firmly secured thereto so that it strengthens the same, while it can only have rotation with the bolt itself. The arms fitting closely against the inner side of the bolt and extending well toward the closed end thereof, provide guides, on either side of which are slidably mounted the tumblers 20. Said tumblers are semicircular in form and each one is adapted to fill the space on one side of the bolt between the guides 17. The tumblers thus have free longitudinal movement, while they can only rotate with the bolt. The tumblers are provided with longitudinal slots 21 and peripheral slots 22, corresponding with the slots 13 and 14 on the bolt. An additional longitudinal slot 23 is added at the end of the peripheral slot farthest from the first one numbered 21, and both of said slots have extensions or notches 21′ and 23′. A coiled spring 25 is inserted within the bolt and placed under pressure between the bolt head 16 and the inner ends 27 of the tumblers 20, thus keeping the other end of the tumbler normally in contact with the keyhole end of the bolt. The bearing of the spring in the ends 27 of the tumblers is such that they move independently of each other. The movement of one tumbler in one direction

will not give corresponding movement to the other tumbler, but by unbalancing the spring rather tends to throw it in the opposite direction. On the ends of the tumblers next the keyhole are seats 28. A pin 30 passes through and is stationary in the casing 2 and the internal portions of the lock are so related to each other that the said pin will also pass through the longitudinal slots 13 of the bolt and the corresponding slots 21 of the tumblers. When thus positioned the bolt will be held withdrawn or in the unlocked position by the spring 11 and the tumblers will be held in their normal position by the spring 25. When, however, the projections 31 of the key are passed through the openings 9 in the head of the bolt they will engage the tumblers, and the recessed portion 33 will engage the space on the bolt head between the perforations 9. The bolt will thus be pushed beyond the face plate 1 while the tumblers will be so moved relatively to the bolt that the transverse slots therein 22 will register with the transverse slots 14 of the bolt, so that when the latter has reached the end of its throw a quarter turn of the key will rotate the bolt until the pin, having passed through the slots 21 and 22 of the tumblers, registers with slot 23, whereupon the tumblers are moved back under the impulse of spring 25 so as to close the peripheral slot 14 on the bolt, thereby securing the latter positively in the locked position. By a reversal of the process, whereby the transverse slots are made to register again, the bolt may be given a quarter turn, whereby the same will be withdrawn by the spring 11. The extensions of the slots 21 and 23 forming the notches 21′ and 23′ afford protection against keys whose ends 31 are not of the proper length to make the register between the transverse slots in the tumblers and the bolts. It will also be noted that by varying the position of the transverse slots 22 on the tumblers, by varying the thickness of the key-seats 28, or the distance between the keyhole openings, a great variety of changes can be made, requiring as many different keys to operate the locks.

By making the striker plate with an oval opening, as shown in Fig. 9, and also providing the ends of the bolt with lugs 35, it will be seen that a ready means is afforded of securing the bolt to the striker plate; as it freely passes through the same in one position and locks therein when the bolt is rotated through 90 degrees as contemplated by the action above described.

I claim:

1. In a lock, a casing, a bolt rotatable therein and provided with a transverse slot, a tumbler having connecting transverse and longitudinal slots slidable in the bolt, and a pin fixed in the casing so as to pass through the slots in the bolt and in said tumbler.

2. In a lock, a casing, a bolt rotatable and longitudinally slidable therein and provided with connecting peripheral and longitudinal slots, a tumbler having connecting transverse and longitudinal slots slidably mounted in the bolt, and a pin secured in the casing so as to engage within the slots in said bolt and tumblers.

3. In a lock, a casing, a tubular bolt movable therein and provided with a peripheral slot, a tumbler longitudinally movable in the bolt provided with a longitudinal slot and a peripheral slot normally non-registering with the slot in the bolt, a relatively stationary member secured to the casing to engage within said slots, and means for causing the peripheral slots in the bolt and tumbler to register with each other.

4. In a lock, the combination of a casing, a tubular bolt longitudinally movable therein and provided with a perforated head, means for normally holding the bolt in retracted position, a tumbler longitudinally movable in the casing, stationary guiding means for the bolt and tumbler secured to the casing, and a key having parts adapted to pass through the head of the bolt to engage the tumblers, and other parts to engage the bolt heads, whereby the tumblers are released and the bolt is actuated.

5. In a lock, a face place having a bolt opening, a casing secured to the face plate, a slotted bolt provided with a flange adapted to center the bolt in the casing, a spring interposed between the flange and the face plate, slotted tumblers in the bolt, means for securing the tumblers against relative rotation therein, a spring interposed between the lock end of the bolt and the tumbler, means secured to the casing to engage within the slots in said bolt and tumblers, and a key adapted to engage the bolt and the tumblers, whereby both may be operatively moved in the same direction.

6. In a lock having a tubular bolt provided with slots; a tumbler provided with slots registrable with the slots in the bolt, a stationary member to engage within said slots, and a guiding device mounted in the bolt and adapted to hold the tumbler against relative rotation.

7. In a lock having a tubular bolt and tumblers therein, a tumbler guiding device comprising a head adapted to close one end of the bolt, and tumbler engaging means secured to the head and inclosed within the bolt.

8. In a lock having a tubular bolt closed at one end, a tumbler inclosed in the bolt, a member to close the other end of the bolt, means projecting from said end closing means to engage the tumbler against relative rotation, and a spring interposed between the tumbler and one of the closed ends of the bolt.

9. In a lock having a tubular bolt closed at one end, a tumbler inclosed in the bolt, a member to close the other end of the bolt, guides projecting from said end closing member to separate the tumbler and act as guides therefor, and a spring interposed between said end closing member and the tumbler.

10. In a lock, the combination of a casing, a hollow bolt provided with a slot movable in the casing, a slotted tumbler movable in the bolt, and a unitary guiding and locking member secured to the casing and adapted to engage the bolt and tumbler within the slots thereof.

11. In a lock, the combination of a tubular casing, a bolt moving longitudinally of the casing and provided with a peripheral guiding flange adapted to center the bolt in the casing, a stop on the casing, and a spring coiled on the bolt and interposed between said stop and said guiding flange.

In witness whereof, I have hereunto set my hand, this 10th day of March 1908, in the presence of two subscribing witnesses.

WILLIAM R. PRICE.

Witnesses:
E. TRESSING,
E. A. KINSLEY.