Feb. 23, 1932. E. J. VOGT 1,846,822

SLIDING DOORLOCK

Filed March 24, 1930

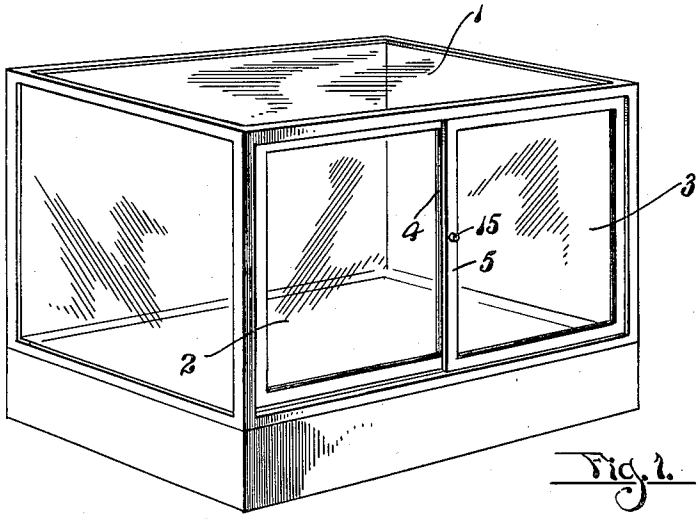


Fig. 1.

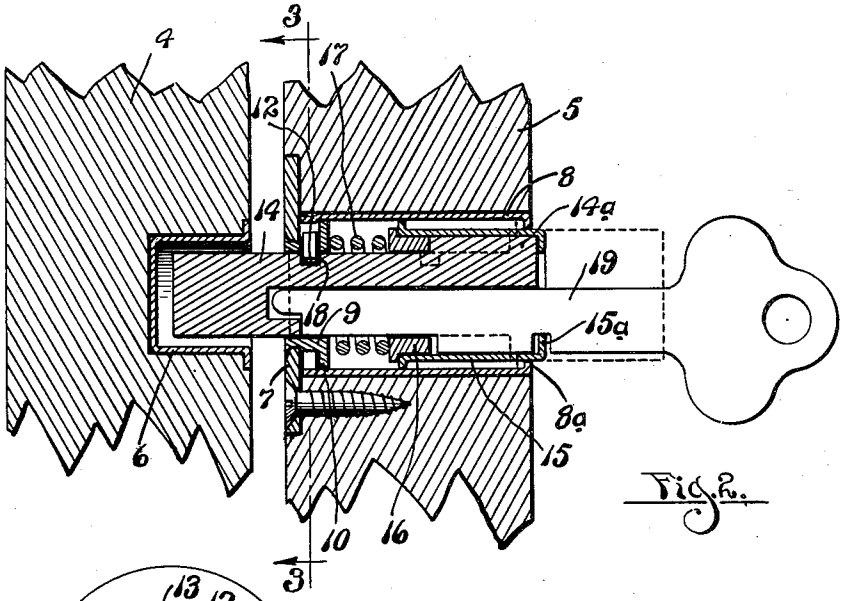


Fig. 2.

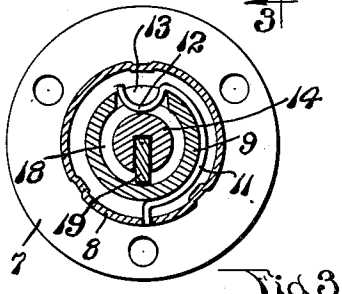


Fig. 3.

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UNITED STATES PATENT OFFICE

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SLIDING DOORLOCK

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This invention relates to a sliding door lock and one which is particularly useful in conjunction with sliding doors on show-cases though in no sense limited to use in this one particular place.

It is a primary object and purpose of the present invention to provide a lock for sliding doors which can be operated readily when the doors are in a position to close an entrance to case, cabinet or the like, the lock-operating automatically upon pressing inward against a projecting portion of the lock which extends in front of an outer sliding door, and which overlaps an inner door. The release of the lock is effected by turning a key which releases the locking bolt and disassociates it from any connection with the door.

The invention also is concerned with a very simple and novel construction of door lock, one which is relatively easy to manufacture and assemble and which is particularly effective in service.

An understanding of the invention may be had from the following description taken in connection with the accompanying drawings, in which,

Fig. 1 is a prospective view illustrating a show-case equipped with the lock of my invention.

Fig. 2 is a fragmentary enlarged vertical section through the overlapped parts of the doors, the section being taken longitudinally of the lock, and,

Fig. 3 is a transverse section through the lock, the plane of the section being substantially on line 3—3 of Fig. 2.

Like reference characters refer to like parts in the different figures of the drawings.

The showcase 1 may be of any conventional construction, being equipped at one side with doors 2 and 3 which may be slid past each other for access to the interior of the case. When the doors are in a position to entirely close the opening to the case, as shown in Fig. 1, they have overlapping vertical edge portions 4 and 5, respectively, and it is with respect to these overlapping portions of the doors that the lock of my invention is used. The inner door 2 is recessed in the part 4 thereof at its outer side and a cup-like keeper 6 inserted in the recess into which the locking bolt of the lock mounted on the part 5 of the outer door 3 is adapted to be entered and thereby hold the doors against sliding movement with respect to each other.

The lock mounted on the part 5 of the outer door 3 includes in its construction a face plate 7 and a housing cylinder 8 which has an open end coming against the plate 7, while the opposite end is provided with an inturned flange 8*a*, as shown in Fig. 2. The cylinder is connected to the face plate by a ring 9 which passes at one end through an opening in the plate 7 and is riveted thereto, while at its other end it is provided with an outturned annular flange 10 located within the cylinder 8. Parts of the cylinder are indented into the space between said flange 10 and the plate 7 thereby making a secure connection.

In the space or groove between the flange 10 and plate 7 and around the ring 9, a retaining member 11 of spring material is located, being secured at one end to the cylinder 8 (see Fig. 3) and curved around the ring 9 for substantially half of its circumference and formed at its free end with an inwardly curved detent 12 adapted to pass through a slot 13 cut in the ring 9. This structure is fully shown in Fig. 3.

The locking bolt 14 passes slidably through the ring 9 and within the cylindrical housing 8 has an enlarged end portion 14*a* which is received within a cylindrical shell 15. This shell at its outer end is formed with an inturned flange 15*a* against which one end of the larger portion 14*a* of the bolt 14 bears, while at the opposite or inner end of the shell 15 a plug 16 is inserted with a press fit thereby securely connecting the bolt 14, shell 15 and plug 16 together. A coiled compression spring 17 is locked around the bolt 14 between the plug 16 and the flange 10, previously described, the tendency of which is to force the bolt and connected cylindrical shell 15 outward to the dotted line position shown in Fig. 2, or until the annular lip at the inner end of the shell 15 is engaged against the inturned flange 8*a* of the housing 8.

The bolt 14 at a point between its ends is formed with an annular groove 18 whereby when the bolt is pushed inward to locking position, the detent 12 on the retaining member 11 passing through the slot 13 enters the groove and holds the bolt from retracting under the force of the spring 17.

It is evident that if the locking bolt is at the outer dotted line position shown in Fig. 2, as soon as it is pushed inward to a position such that the groove 18 is moved into place to receive the detent 12, the bolt is thereupon automatically held in its operative locked position; and if the doors have been closed, the keeper 6 will be in a position to receive the projecting end of the bolt 14 and the doors will be held against sliding movement.

Release of the bolt is obtained by means of a key, as shown at 19, which may be inserted into the locking bolt. The bolt is slotted at one side from its outer end for a portion of its length, whereby an edge of the key rides against the inner side of the ring 9. Then by turning the bolt by means of the key about its longitudinal axis, an edge of the key comes to the curved detent 12 and moves the same out of the groove 18, releasing the bolt from the detent, whereupon spring 17 moves the bolt outward to the dotted line position and the two doors are disconnected from each other.

The construction described is very practical and efficient and has so proved in use. The lock is of simple manufacture. It is durable and efficient. The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure comprehended by said claims.

I claim:

1. In a lock construction, a face plate, a cylindrical housing at one side of the face plate, a ring connected to said plate and extending into the housing having an outwardly extending annular flange between which and said face plate an end of the housing is secured, said ring having a slot therethrough at one side, a bolt slidably mounted in said housing, spring means between said bolt and ring for longitudinally moving the bolt in one direction, and a spring retaining means attached to the housing and extending through said slot in said ring, the bolt having an annular groove around the same between its ends into which the retaining means enters on moving the bolt longitudinally to a predetermined position against the force of said spring means.

2. A construction containing the elements in combination defined in claim 1, said bolt having a radial slot longitudinal thereof in one side into which a key is adapted to be inserted, whereby on turning the bolt about its longitudinal axis an edge of the key engages with the retaining means and forces it out of said groove in the bolt.

3. In a construction of the class described, a face plate, a ring attached to and extending to one side of the face plate and having an outwardly extending annular flange spaced from said plate, a cylindrical housing located over said ring and flange and secured at one end between said plate and flange, said ring having a slot therein, a curved spring retaining means secured at one end to the housing and located around the ring and at its free end formed with a semi-circular detent extending through said slot in said ring, a bolt extending through said ring and housing and mounted therein for slidable and rotating movements, said bolt having an annular groove around the same between its ends and a coiled spring tending to move the bolt longitudinally in one direction, said bolt being movable in the opposite direction by application of force to an end thereof to overcome the coiled spring, whereby the bolt may be moved to bring the groove therein into position for the entrance of said detent.

4. A construction containing the elements in combination defined in claim 3, said bolt having an enlarged portion within the housing adjacent the free end of said housing, a sheet metal shell surrounding said enlarged portion of the bolt, a plug around said bolt inserted in the inner end of the shell against which one end of said coiled spring bears, said cylindrical housing at its free end having an inturned flange and said shell at its outer end having an inturned flange to bear against the adjacent enlarged end of the bolt and at its inner end having an outturned lip adapted to engage with the inturned flange of the housing to limit the longitudinal movement of the bolt under the action of said coiled spring.

5. In a lock construction, a face plate, a cylindrical housing at one side of the face plate, a ring connected to said plate and over which an end of the housing is secured, a bolt slidably mounted in said housing, spring means between said bolt and ring for longitudinally moving the bolt in one direction, and a spring retaining means located interiorly of said ring, the bolt having an annular groove around the same between its ends into which the retaining means enters on moving the bolt longitudinally to a predetermined position against the force of said spring means.

6. In a lock construction, a face plate, a cylindrical housing at one side of the face plate, means for fastening one end of the housing to the face plate, a bolt slidably mounted in said housing, a flange slightly spaced from the face plate whereby a small recess is formed therebetween, spring latching means located in said small recess, said bolt having an annular groove around the

same, and spring means between the bolt and the flange for longitudinally moving the bolt in one direction whereby the spring latching means enters the annular groove on moving the bolt longitudinally to a predetermined position against the force of said spring means.

7. A construction containing the elements in combination defined in claim 6, said bolt having a radial slot longitudinal thereof in one side into which a key is adapted to be inserted, whereby on turning the bolt about its longitudinal axis an edge of the key engages with the retaining means and forces it out of said groove in the bolt.

In testimony whereof I affix my signature.

ENGELBERT J. VOGT.