

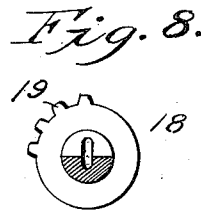
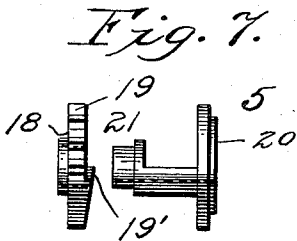
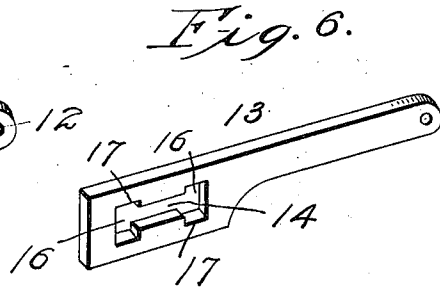
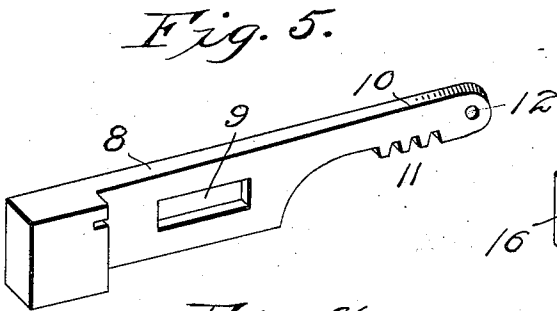
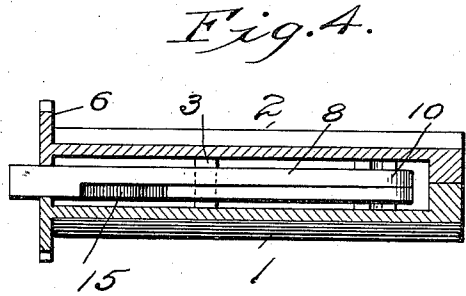
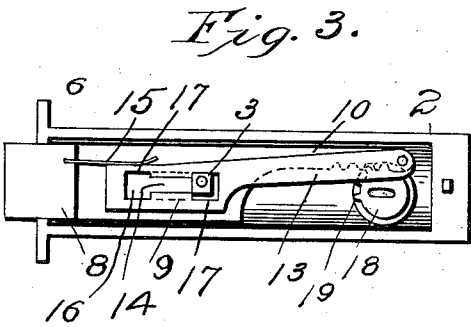
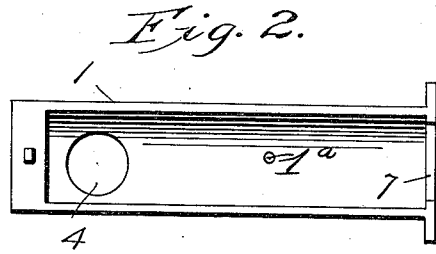
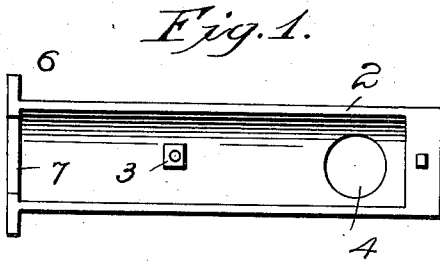
M. RASMUSSEN.
DOOR LOCK.

APPLICATION FILED MAR. 21, 1910.

1,015,070.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.



Witnesses
C. R. Lundy
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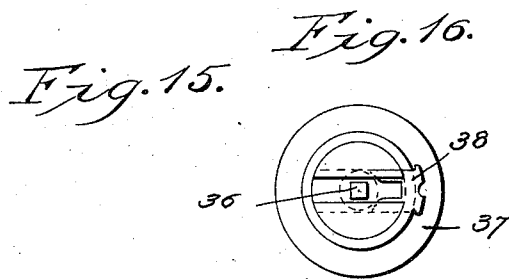
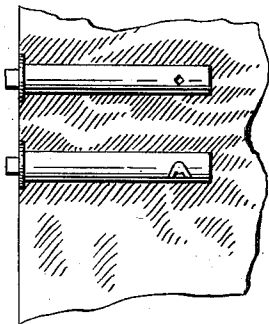
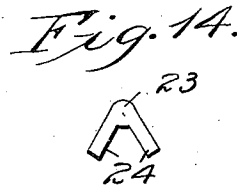
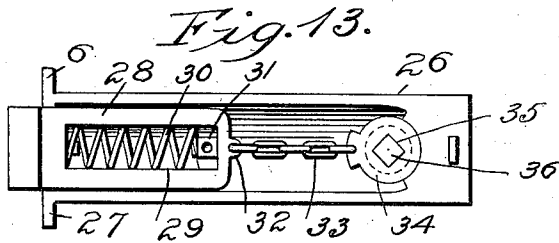
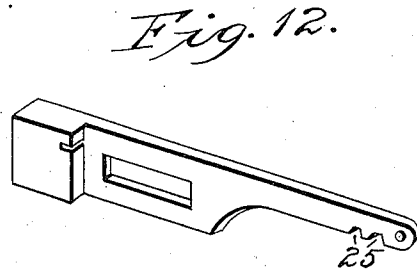
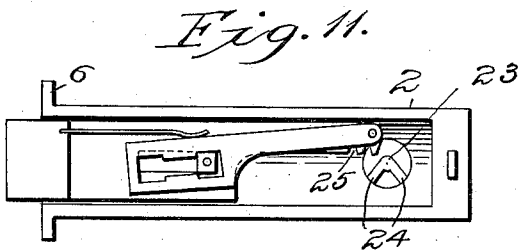
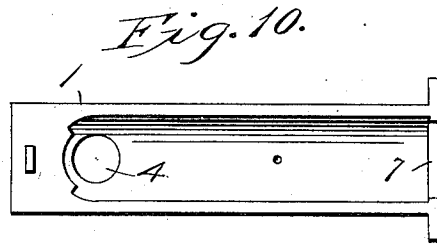
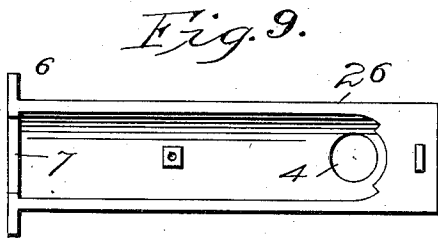
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DOOR LOCK.
APPLICATION FILED MAR. 21, 1910.

1,015,070.

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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

MARTIN RASMUSSEN, OF RACINE, WISCONSIN.

DOOR-LOCK.

1,015,070.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed March 21, 1910. Serial No. 550,693.

To all whom it may concern:

Be it known that I, MARTIN RASMUSSEN, a subject of the King of Denmark, residing at Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Door-Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to door locks.

The object of the invention is to provide a simple, cheap and efficient lock which will not weaken the structure of the door, and which may be more conveniently placed in the door than the present type of inserted lock.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a fragmentary side elevation of one-half of the casing; Fig. 2 is a similar view of the opposite half; Fig. 3 is a side elevation of the lock with one side removed and the bolt and latch plate in position therein; Fig. 4 is a horizontal section on the line 4-4 of Fig. 3; Fig. 5 is a perspective view of the bolt; Fig. 6 is a similar view of the latch plate; Fig. 7 is a side elevation of the key cylinder and toothed disk arranged in juxtaposition ready for assembling; Fig. 8 is an end view of the disk; Figs. 9 and 10 are views similar to Figs. 1 and 2 of a modified form; Fig. 11 is a side elevation similar to that shown in Fig. 3 with a modified form of bolt and latch plate; Fig. 12 is a perspective view of the bolt; Fig. 13 is a side elevation with one plate removed of a knob lock which is adapted to be used in connection with the key bolts shown in the foregoing figures; Fig. 14 is an end elevation of a key used in connection with the type of lock shown in Figs. 9 to 12; Fig. 15 is a side elevation of a door showing the application of the knob and key bolts; Fig. 16 is an end elevation of the locking plate used in connection with the knob lock.

Referring more especially to the drawings, 1 and 2 represent the separate halves. These sections are semi-cylindrical in cross section and are connected together by a screw which

passes through the aperture 1^a in section 1 and takes into a laterally projecting angular stud 3 in section 2. Each half is provided with an opening 4 through which the key cylinder 5 which will hereinafter be described is passed. The forward end of the section 2 is provided with a circular disk 6 through a hole 7 in which, a bolt 8 is adapted to slide. This bolt extends rearwardly in the casing and is provided with a slot 9 through which the stud 3 passes and at its rear end is cut away on one edge so as to lie over the key cylinder 5. The extension 10 of the bolt 8 is provided on its underside with ratchet teeth 11 and with a pivot hole 12 in its extreme end. Secured to the bolt by means of a rivet passing through the hole 12, is a latch plate 13 which is provided with a slot 14 to take over the stud 3 and is engaged by a spring 15 which normally keeps the latch depressed. The spring is carried by the forward portion of the bolt and the slot 14 has communicating with it at either end transverse slots 16 which form notches 17. Under the action of the spring, when the stud 3 is in either one of the slots 16, the latch plate will be forced downwardly until the stud is held in one of the notches 17.

A suitable toothed disk 18 is mounted on the reduced end of the key cylinder 5 and has on its periphery a plurality of teeth 19 which engage the rack 11. The inner face of the disk 18 is provided in diametrically opposite sides with single ratchet teeth 19 having a square upper face and a beveled lower face. The key cylinder 5 is journaled in the casing with the reduced ends 20 and 21 projecting from either side thereof, and when the key is inserted in the cylinder, it is turned until the bit engages the underneath side of the latch plate, at which time, said latch plate will be raised to bring the slot 14 into alinement with the stud 3. The inner portion of the bit now engages one of the ratchet teeth 19 and thus turns the disk 18 and withdraws the bolt. The portion of the bit which engaged the latch bar having been disengaged therefrom permits the latch bar to drop and the notch 17 at the opposite end of the slot 14 to engage the stud 3 and lock the bolt in retracted position. The key may now be withdrawn.

In Figs. 9, 10, 11 and 12, the key cylinder is formed for a double bit key, as shown in Fig. 14. This key 23 has two bits, 24, ex-

tending radially from the shank which engage the separate notches 25 in the underneath side of the bolt and one of the bits engages the latch plate so that the bolt is permitted to move.

The knob lock comprises a semi-cylindrical casing 26 similar to the casing shown in Figs. 1 and 2 and having on its forward end the end plate 27 through which the bolt 28 slides. This bolt has a slot 29 extending approximately from one end to the other, in which is located a spiral spring 30 bearing at one end upon the wall of the slot and at its opposite end on the stud 31 which is used to connect the sections of the casing together. The inner extremity of the bolt 28 is provided with an apertured ear 32 to which is connected a chain 33, whose opposite end is connected to the knob cylinder 34. This knob cylinder is journaled in the casing in a similar manner to the key cylinder, as shown in Fig. 3, and is provided with a square central opening 35 adapted to receive the knob shank 36. When the knob shank is turned in either direction, the flexible chain withdraws the bolt and the spring projects it to its locking position. Mounted over the knob shank on the side of the door, is a plate 37 upon which is slidably mounted a locking plate 38 having a squared opening to receive the knob shank. This device is placed upon the inside of the door and when pressed into engagement with the knob shank prevents any operation of this lock.

In Fig. 15, I show the application of the knob and key locks to a door wherein it will be seen that only two holes are applied to the board and no chiseling is necessary.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim is:

1. A lock comprising a casing, a transverse stop therein, a bolt slidably mounted in said casing and provided with a longitudinal slot engaging said stop, said bolt having a reduced rear end provided with a rack on its under edge, a latch pivoted to the rear end of said bolt and having a longitudinal slot to fit over said transverse stop, said slot having notches at the ends thereof to engage the transverse stop and hold the latch against longitudinal movement, and releasing means operable in the casing below the rear ends of the bolt and the latch and adapted to impinge against the under edge of the latch to disengage it from the transverse stop and to engage the rack on the bolt to move the bolt longitudinally.

2. A lock comprising a casing, a transverse stop therein, a bolt slidably mounted in the casing and provided with a longitudinal slot engaging said stop, said bolt having a reduced rear end provided with a rack on its under edge, a latch pivoted to the rear end of the bolt and having a longitudinal slot to fit over said transverse stop and notches at the ends of said slot to engage the transverse stop and hold the latch against longitudinal movement, and key actuated bolt operating means mounted in the casing below the rear ends of the bolt and the latch and adapted on the turning of the key to engage the rack on the bolt to move the bolt longitudinally a key for engagement with said means, said means being disposed in position to cause the body of the key when inserted therein and rotated to impinge against the under edge of the latch and raise it out of engagement with said transverse stop prior to the actuation of the bolt operating means.

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

MARTIN RASMUSSEN.

Witnesses:

LARS BERG,
P. C. PETERSON.