

APPLICATION FILED MAY 2, 1911.

2 SHEETS-SHEET 1.

Fig:1



By his Attorney
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DOOR LOCK.

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Patented June 11, 1912.

2 SHEETS—SHEET 2.

1,028,929.

Fig. 2

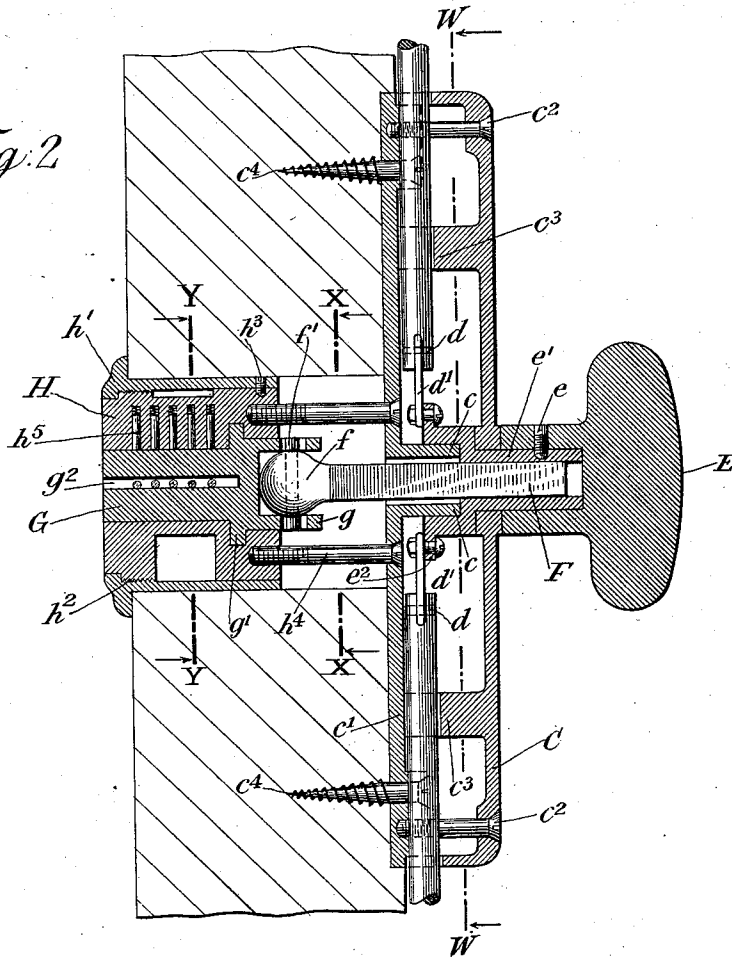


Fig. 3

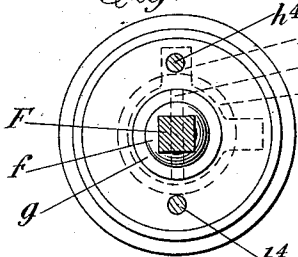


Fig. 4

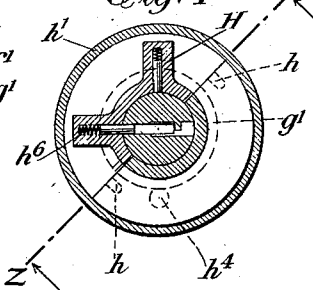
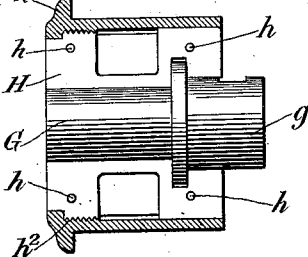


Fig. 5



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UNITED STATES PATENT OFFICE.

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DOOR-LOCK.

1,028,929.

Specification of Letters Patent.

Patented June 11, 1912.

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To all whom it may concern:

Be it known that I, JOHN CALDWELL, a citizen of the United States, and resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification, reference being had to the accompanying drawings.

The improvements relate to door-locks designed to effect a thrust of vertical or lateral bolts.

The principal objects in view are to produce a lock, the parts whereof can be readily assembled and operate with certainty; and which will permit an easy insertion and removal of the key.

The invention consists in certain special features and combinations to be hereinafter more fully described and pointed out or distinctly indicated in and by the claims.

In the accompanying drawings Figure 1, is a side elevation of part of a door and door-frame having the improvements, along with a vertical section taken on the line *w, w*, of Fig. 2, looking in the direction of the arrows, of the bolt-plates or casing and some of their connecting parts. Fig. 2, is a vertical section taken on the line *v, v*, of Fig. 1, and shows a part of the door, two vertical bolts, a section of the door-knob, casing, cylinder, and the arrangement of the lock pins or tumblers, the actuating shank and securing screws appearing in full. Fig. 3, is a section taken on the line *x, x*, of Fig. 2, looking in the direction of the arrows, and shows the relative position of the lock barrel or cylinder to the actuating shank and securing devices appearing in section. Fig. 4, is a section through the barrel or cylinder, taken on the line *y, y*, of Fig. 2, looking in the direction of the arrows; and Fig. 5, is a section taken on the line *z, z*, of Fig. 4, looking in the direction of the arrows.

In these drawings A, represents a door, and B, the door frame. The lock and bolting mechanism is located on the inside of the door A, at a suitable height from the floor. The mechanism comprises a case C, bolts D, knob E, actuating-shank F, the lock and key barrel G, and tumbler cylinder H, with their retaining and connecting parts. The knob E, is secured by a screw *e*, to a spindle *e'*, and the spindle *e'*, has a flange or lugs *e²*, at its inner end. The

spindle *e'*, is rotatable within given limits, its inner end or face being adapted to receive or fit over a projection *c*, which extends from the inner plate *c'*, of the casing C. The bolts D, are pivotally connected by a pin *d*, to a link *d'*, and the other end of the link *d'*, is likewise pivotally connected to the flange *e²*. The drawings show three bolts, two of which move vertically and one laterally; there may, however, be but one bolt, or any desired number. The outer plate of the casing C, is secured by screws *c²*, *c²*, with the inner plate *c'*, and this outer plate has inwardly extending guides or sleeves *c³*, *c³*, for the bolts which move vertically. The inner plate *c'*, is secured to the door by screws *c⁴*, *c⁴*, as seen in Figs. 1, and 2, and there are preferably four such screws as shown.

The knob shank F, is preferably square in cross section, being provided with an enlarged rounded inner end *f*, secured by pin *f'*, to a projection *g*, at the inner end of the barrel G. The square part of the shank F, fits in a square recess in the spindle *e'*, and partially turns as the knob is turned or as the key is turned, so as to throw the bolts in or out of locking connection. The barrel G, has a flange or collar *g'*, which works in a groove in the tumbler cylinder H, thus retaining the cylinder in place.

The tumbler cylinder H, is preferably split or formed in halves as shown in Fig. 4. One part or half of this cylinder is provided with recesses *h*, *h*, into which corresponding pins on the other half seat or extend when the two halves are brought together, and after being so placed the cylinder is inclosed or incased by a collar or ferrule *h'*, which is shown as being secured over the cylinder by screw threads *h²*, and also by a pin or screw *h³*. The outer end of the ferrule *h'*, is flanged so as to fit neatly against the outer side of the door when the lock is secured in place for operation. The cylinder H, is secured to the inner plate *c'*, by screws *h⁴*.

On one half of the cylinder H, provision is made at quarter turns for receiving the tumbler pins *h⁵*, which fit in suitable recesses and are subject to the action of springs *h⁶*, as seen in Fig. 4. The key is inserted in a suitable slot *g²*, extending from the outside inwardly in the barrel G. They key hole or slot is also provided with lateral

apertures on one side which correspond with the position of the tumbler pins h^5 , so that they may drop from the recesses in the cylinder H, to those connecting with the key hole in the barrel G. As before stated, there are two sets of the tumblers h^5 , and when in locking contact they will be in the position shown in Fig. 4, in which one pin h^5 , is entirely within the barrel G, and partly within the key hole, while the one directly back of it is held partly within the barrel G, and partly within the cylinder H, and it may be assumed that other tumbler pins have the same relation as indicated in Fig. 2.

The insertion of a suitable key will force the several tumblers which project into the key hole back to the periphery of the barrel G, which action will also force the contact tumblers back into their recesses in the cylinder H, and the barrel can then be turned one quarter of a circle and the key withdrawn, leaving the parts in locking contact. The turns given to the barrel G, by the key act through the connecting parts above described so as to throw or withdraw the bolts.

The drawings show the bolting contact as being effected by guide sleeves a, a , and b, b , secured at the ends or sides of the door A, and its frame B, respectively. These and other connections may be varied or modified according to special requirements, or as a matter of taste, without departing from

the essence of the invention which is to be claimed with due allowance for such scope as may properly belong to it.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A door-lock comprising a rotary key-barrel, having a flanged retaining collar and recesses for receiving tumblers, a divided cylinder encircling said key-barrel and inclosing said collar, said cylinder having tumbler recesses registering with those in said key-barrel and tumblers within said recesses, in combination with a spindle having connection with said key-barrel and a knob and bolts connected with said spindle, whereby the turning of said key-barrel by a key or the knob may be made to cause a thrust of said bolts for locking and unlocking.

2. A door-lock, comprising a rotary key-barrel having a flanged retaining collar, a divided cylinder having a recess within which said collar may move, means for securing said key-barrel within said cylinder, an actuating shank connected with said key-barrel, a spindle connected with said shank, and a bolt connected with said spindle, whereby the turning of a key operates to give said bolt a thrust.

JOHN CALDWELL.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."