

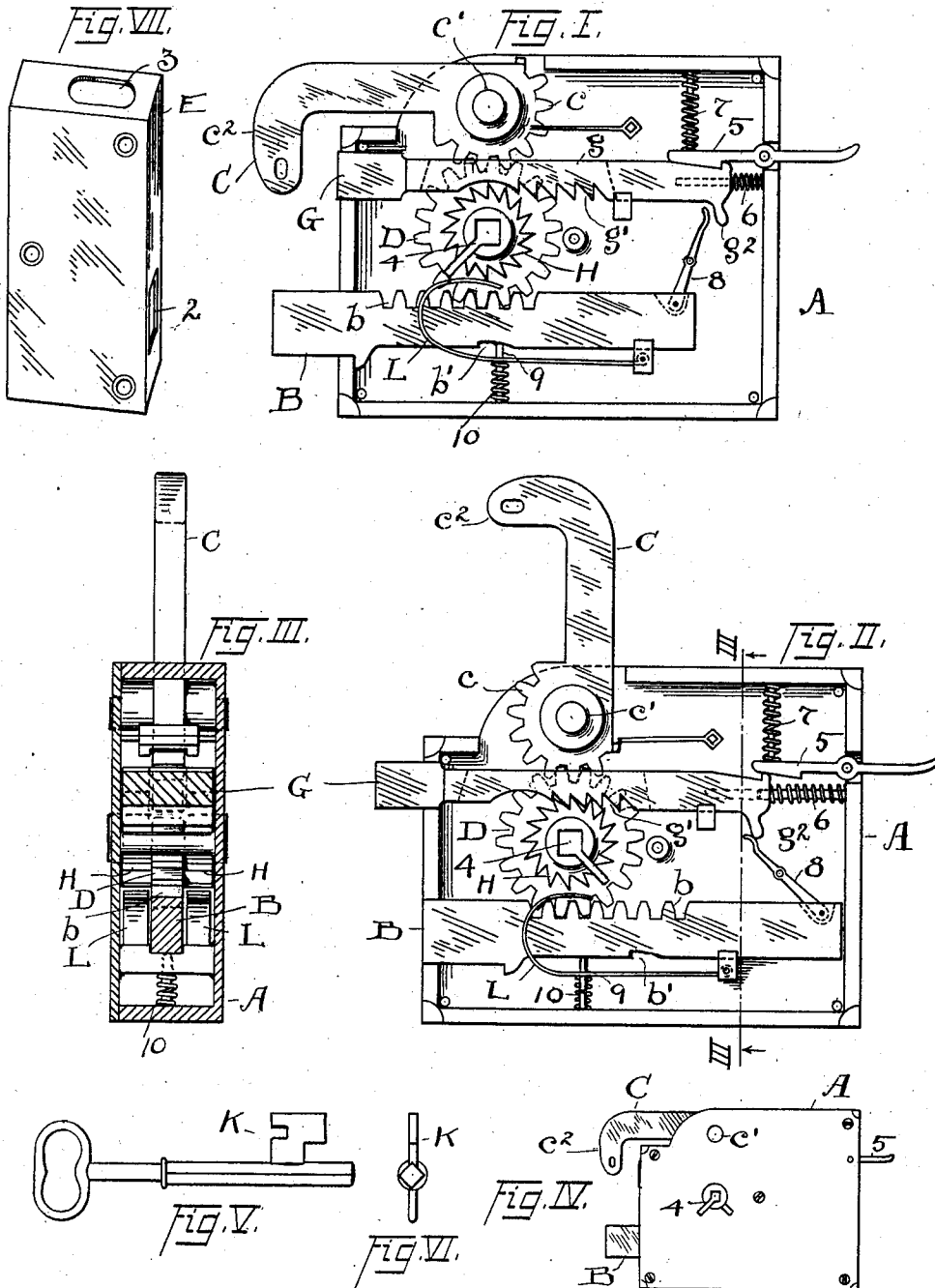
No. 753,642.

PATENTED MAR. 1, 1904.

J. SLIGA.
DOOR LOCK.

APPLICATION FILED NOV. 14, 1903.

NO MODEL.



Witnesses:

F. C. Valentine
O. H. Moser.

Inventor,

John Sliga
H. J. Fisher.

Attorney

UNITED STATES PATENT OFFICE.

JOHN SLIGA, OF CLEVELAND, OHIO.

DOOR-LOCK.

SPECIFICATION forming part of Letters Patent No. 753,642, dated March 1, 1904.

Application filed November 14, 1903. Serial No. 181,237. (No model.)

To all whom it may concern:

Be it known that I, JOHN SLIGA, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Door-Locks; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in door-locks; and the invention consists in the construction and combination of parts, substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure I is a side elevation of my improved lock with the side plate which belongs at the front of this view removed and with the bolts in locking position. Fig. II is a corresponding view to Fig. I, excepting that the locking-bolts proper are withdrawn and the safety-bolt projected into locking position. Fig. III is a cross-section of the mechanism corresponding to line 3 3, Fig. II. Fig. IV is a side view of the lock reduced in size as compared with Fig. I. Fig. V is a side view of the key, and Fig. VI an end view thereof. Fig. VII is a perspective view of the box for the door-casing with which the locking-bolts are adapted to make engagement.

The locking mechanism thus shown and described is designed more especially to be used with heavy sliding doors; but it may be used wherever a strong or double lock may be required, whether sliding or swinging.

A represents the casing of the lock, which may be made in two or more pieces.

B and C represent two bolts which are operatively connected by a gear or pinion D. Bolt B is provided with teeth or rack *b* on its top edge engaged by pinion D, and bolt C has teeth *c* upon a segment about its pivot *c'* operatively engaged with gear or pinion D. Bolt B has a sliding back-and-forth movement, as with bolts usually, and bolt D has an engaging hook *c''* adapted to turn or rotate upon its pivot *c'*, so as to assume a locking posi-

tion, as in Fig. I, when it is down, and an unlocked position, as in Fig. II, when it is up.

The locking-box E has suitable holes 2 and 3, adapted to be engaged by the respective bolts, as will appear, and the hole or opening 3 in the top of the box is in position to be entered by the hook *c''* of bolt C from above, and thereby prevent the door from being pushed open without releasing said bolt.

Obviously when box E is inserted in the casing of a door or door-jamb the casing itself will require suitable recessing above said hole 3 to enable hook *c''* to swing into and out of engagement. For a swinging door-bolt C can be omitted.

The bolts B and C are the real locking-bolts, and it is designed when both are used that both should work together and be operated by the same means. To this end I provide a key K, which is adapted to be inserted in the keyhole 4 in the axis of gear D and through which said gear is rotated and bolts B and C are actuated for both locking and unlocking; but in addition to this I also employ a safety-bolt G. The said bolt is located between bolts B and C over gear D and is provided with a lengthwise slot *g*, which gives the said bolt freedom of operation in respect to said gear and segment-teeth *c* above. Bolt G is exclusively for safety purposes and is not meant to be a factor in locking the door, except in certain cases, yet it has a locking function, which may be exerted when bolts B and C are withdrawn, as in Fig. II; otherwise and chiefly it is a precautionary element, serving to be thrown into reserve as against possible tampering with bolts B and C when the door is locked. The said bolt has a width corresponding to the width of the inside of the casing A and is provided with teeth *g'* on each side of its slot *g* along its bottom, adapted to mesh with the circular ratchets H at either side of the gear D and smaller than said gear relatively, as shown, and mounted to rotate therewith. Keyhole 4 likewise passes through these ratchets, and the said ratchets engage the teeth of the said bolt G, so that the bolt can be operated through the medium of key K

for both locking and unlocking the bolt; but when bolt G is out, as in Fig. II, bolts B and C necessarily are retired, and bolt G can only be out when said bolts are retired; but in such case bolt G must first be released from its latch 5, so as to get within range of the ratchets H and be actuated thereby when bolts B and C are thrown back out of engaging position. This has occurred in Fig. II presumably while bolts B and C were out, as in Fig. I. In that case and with latch 5 raised spring 6 behind bolt G would shoot said bolt upward until its teeth g' would strike the ratchets H. The said bolt could then go no farther, because it would also be stopped by lever 8; but it would be in position to be engaged by the ratchet-wheels and go forward into locking position the moment a key was inserted and the bolts B and C were retired. All this presumably has occurred in Fig. II, and it will be seen that when parts B and C are thrown to locking position again bolt G will be retired beneath its latch 5 and held back until the latch is again released by hand from the inside of the room. To this end the said latch has a handle extension outside casing A. It follows also that when bolt G is projected, as in Fig. II, it will be impossible to open the door even after said bolt has been withdrawn, because said bolt cannot be withdrawn by a key or by pressing against its outer end or otherwise without throwing bolts B and C into locking position.

It follows from the foregoing that when bolt G is released from catch 5 either the said bolt or both bolts B and C will come into locking position, and the movement of one out of locking position is a mere exchange for the other and one or the other must necessarily engage under any circumstances. The spring 7 serves to press the latch 5 down to make its operation secure, and centrally-pivoted lever 8 works in the inner extremity of bolt B and against a rear end projection g'' on bolt G, and the said lever will prevent bolt G from crowding forward after its release from latch 5 before the bolt B is retired. A further precaution for bolt B is shown at its bottom, wherein there is a notch or recess b' , adapted to be engaged by a spring-pressed pin or lock 9 from below. A rigid hook-shaped member L on each side of bolt B has its hook portion extending within range of the slot of keyhole 4, so that when the key is inserted it will bear down upon the said hook ends and depress the lock 9, which is held up normally by its spring 10, and thus enables the bolt B to be projected; otherwise the said bolt when out is properly locked out by means of the pin 9, although there is a measure of play in the said bolt B and in its recess b' to permit it to be partially withdrawn without encountering the lock 9.

When the door is closed and box E and cas-

ing A abut, bolt G will strike or bear against the abutting face of box E, and thereby prevent unlocking of bolts B and C—that is, if latch 5 is unhooked. If an opening were provided in box E for bolt G, locking could still be effected if the lock were used only on swing- ing doors.

What I claim is—

1. In door-locks, a sliding bolt and a rotary turning bolt, and a gear between and engaging said bolts, whereby the bolts are operated when the gear is turned, and means to rotate said gear, substantially as described.

2. In door-locks, a rotary turning bolt having a hook at its free end and a sliding bolt beneath the same, said bolts provided each with a series of teeth, and a rotatable gear in mesh with said teeth having an opening adapted to receive a key, substantially as described.

3. In door-locks, a rotatable bolt having a pivot at one end on which it turns and a hook at the other end and teeth about its pivot, a sliding bolt provided with teeth, a gear in mesh with said teeth on both bolts, a safety-bolt having teeth, and ratchets on said gear adapted to mesh with the teeth on said safety-bolt, substantially as described.

4. In door-locks, a rotatable bolt having a hook on its free end, a sliding bolt, and teeth on both said bolts, a key-actuated gear in mesh with the teeth of both bolts, ratchets on said gear, a sliding safety-bolt having teeth adapted to mesh with said ratchets, and a catch for said safety-bolt, substantially as described.

5. In door-locks, a bolt pivoted at one end and having a hook at the other end, a sliding bolt and a gear operatively engaged with both said bolts, in combination with a safety-bolt, substantially as described.

6. In door-locks, a sliding bolt having a series of teeth and a rotatable gear in mesh with said teeth, in combination with a safety-bolt provided with teeth and a ratchet member at the side of said gear in mesh with the teeth on said safety-bolt, substantially as described.

7. A door-lock comprising a sliding bolt with teeth on its edge, a gear in mesh therewith having a key-opening centrally therein, and ratchet-teeth at the sides of said gear, in combination with a safety-bolt slotted to rest over said gear and having teeth engaged by said ratchet-teeth, a bolt provided with gear-teeth meshing with said gear, and a pivoted lever between said bolt and safety-bolt adapted to reverse the movement of said bolts, substantially as described.

8. A door-lock comprising a safety-bolt having teeth between its ends, key-actuated ratchet-wheels adapted to engage said teeth and means to hold said bolt back out of ratchet engagement, substantially as described.

9. The combination of the sliding locking-bolt and means to move the same back and forth, in combination with a safety-bolt and

actuating means therefor, and a pivoted lever between the ends of said bolts and adapted to serve as a brace and stop between them, substantially as described.

5 10. In door-locks, a sliding bolt having teeth along its top edge and a key-actuated gear meshing with said teeth, a spring-catch for said bolt at its bottom, and a pivoted device

to depress said catch and release said bolt, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN SLIGA.

Witnesses:

R. B. MOSER,
M. A. KALOZI.