

R. FEOLA.
LOCK.

APPLICATION FILED JULY 25, 1911. RENEWED MAR. 24, 1913.

1,060,444.

Patented Apr. 29, 1913.

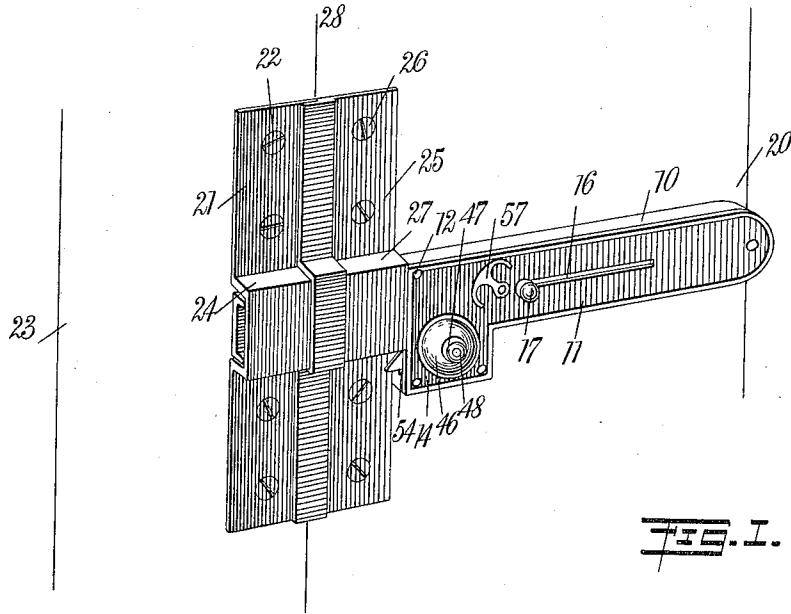


FIG. 1.

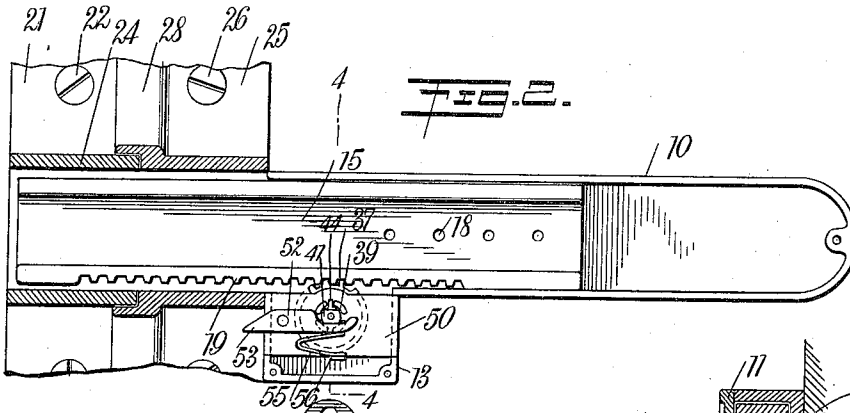


FIG. 2.

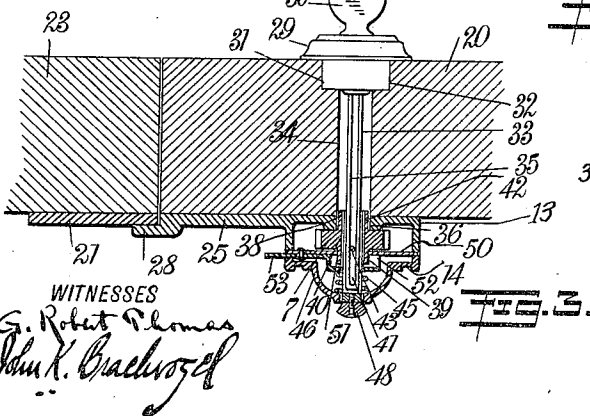
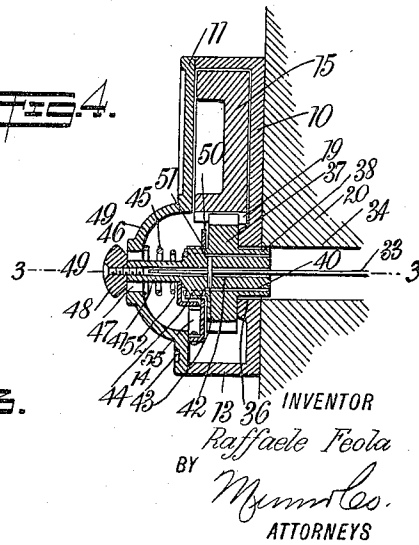


FIG. 3.

FIG. 4.



WITNESSES
G. Robert Thomas
John K. Brachvogel

INVENTOR
Raffaele Feola
BY
Merrill Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

RAFFAELE FEOLA, OF NEW YORK, N. Y.

LOCK.

1,060,444.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed July 25, 1911, Serial No. 640,406. Renewed March 24, 1913. Serial No. 756,561.

To all whom it may concern:

Be it known that I, RAFFAELE FEOLA, a subject of the King of Italy, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Lock, of which the following is a full, clear, and exact description.

This invention relates to locks for use with doors and other closures and has reference more particularly to a lock which comprises any suitable key-controllable mechanism including a bolt-actuated member, a casing, a bolt therein, normally operative means for operatively connecting the bolt and the actuating member, and means whereby the connecting means can be rendered inoperative to adapt the bolt for manual operation independently of the key-controllable mechanism.

The object of the invention is to provide a simple, inexpensive and durable lock which can be used with doors, shutters and other closures, with which any suitable key-controllable mechanism can be employed, which cannot be picked without great difficulty, in which the key-controllable mechanism can be rendered inoperative with respect to the bolt, to permit independent manual operation of the bolt, and in which the bolt can be secured against operation by the key-controllable mechanism or otherwise.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view showing an embodiment of my invention applied to a door; Fig. 2 is an enlarged, transverse section showing the bolt and parts of the operating mechanism; Fig. 3 is an enlarged, horizontal section on the line 3—3 of Fig. 4 showing the connection between the key-controllable mechanism and the bolt-actuating mechanism; and Fig. 4 is an enlarged, vertical section on the line 4—4 of Fig. 2.

Before proceeding to a more detailed explanation of my invention, it should be clearly understood that while I prefer to employ with the same, key-controllable

mechanism of the pin tumbler type, any other means adapted for the purpose can be used. The lock is designed particularly for use with doors of apartment houses or other dwellings where there is danger of unauthorized entry on the part of sneak thieves or others, and is intended to prevent the possibility of having the door-lock forced or picked. The lock includes a very strong extension bolt which will securely hold the door closed, and with which are associated a keeper and a guard of proportionate dimensions.

Certain of the details of construction shown for example herewith, form no part of the invention and can be varied in accordance with individual preference and special conditions, without deviating from the essence of the invention as defined in the appended claims.

Referring more particularly to the drawings, I employ a lock casing 10 fashioned from cast metal or any other suitable material, and having an ornamental, removable cover 11 secured thereto by means of screws or rivets 12. The casing is of elongated form and is open at one end. Adjacent to the open end it has a downward extension 13 over which rests a corresponding extension 14 of the cover. Within the casing and slidable over the extension 13 is a bolt 15, which is of suitable length and cross sectional form to insure great strength. The cover 11 has a slot 16 extending longitudinally thereof, through which projects the stem or shank of a manipulating member 17, presenting a knob which can be easily grasped in the hand. The shank of the manipulating member is received in any one of a plurality of threaded or otherwise suitably formed openings 18 of the body so that the bolt can be moved backward and forward in the direction of its length, by means of the manipulating member or knob. At the lower edge or face the bolt is provided with a plurality of teeth 19 which constitute a rack, for a purpose to appear hereinafter.

The casing it will be understood, is mounted upon the door in any suitable manner, and is arranged to register with a keeper 21 secured by means of screws 22 upon the door frame 23. The keeper has a U-shaped offset or socket 24 into which the bolt can be projected to lock the door. Between the casing and the keeper, at the edge

of the door, is a guard 25 secured in place by means of screws 26 and having an offset or socket 27 corresponding to the socket 24 of the keeper. At the outer edge, the guard has an offset flange 28, which, when the door is closed extends over the corresponding adjacent edge of the keeper, as is clearly shown in Figs. 2 and 3. When the bolt is projected, it extends through the sockets 24 and 27 of the guard and the keeper, and the door is thus firmly locked. The guard renders it practically impossible to open the lock by thrusting an implement through the crack of the door against the bolt and forcing the same rearwardly. The flange 28 assists in insuring that the lock cannot be opened in this manner.

Mounted at the outside of the door is a suitable key-controllable mechanism 29, for example, pin tumbler mechanism, operated by means of a properly shaped key 30. The barrel 31 of the mechanism is located in an opening 32 of the door, and has an extended actuating member 33 which passes through an opening 34 of the door into the extension of the lock casing. The actuating member 33 in the present instance consists of an elongated bar having a longitudinal slot 35. The extension of the lock casing has an opening registering with the opening 34, and at this opening is formed into a bearing 36. I employ a gear pinion 37 normally in mesh with the rack of the bolt and having a hub 38 journaled in the bearing 36. At the opposite side the pinion has a slotted or split collar 39.

The pinion has a bore or opening 40 in which is mounted a cylindrical releasing member 41 having a central, longitudinal opening 42 in which is received the actuating member 33. The transverse pin 43 is located in the slot 35 of the actuating member and limits the movement of the releasing member 41 relative to the actuating member. The releasing member 41, intermediate its ends has lateral wings or projections 44 normally received in the openings of the slotted collar 39, so that the pinion is constrained to turn with the releasing member and with the actuating member. A spring 45 engages the projections 44 and under a rounded, offset 46 of the cover extension 14, normally pressing the releasing member into operative engagement with the collar of the pinion. The part 46 of the cover has an opening 47 through which the end of the releasing member extends. A manipulating button or head 48 secured by means of a screw 49, or in any other suitable manner to the releasing member, permits the latter to be drawn out manually against the tension of the spring, so that it can be released from the pinion, and serves to disconnect the latter and the key-controllable mechanism.

Arranged over the casing extension 13, and under the cover extension 14, is a plate 50 having a central opening 51, through which the collar 39 of the pinion extends. Pivotaly mounted upon the plate is a lever 52, constituting a keeper for a purpose which will appear hereinafter, and having an end 53 projecting through an opening 54 in the side of the casing extension. A U-spring 55 is arranged between a stud 56 of the plate 50 and the keeper 52, and normally presses the latter toward the collar 39. The keeper has the end within the casing extension suitably formed to engage under the projections 44 of the releasing member when the same is moved into an inoperative position, that is, when it is pulled out, against the tension of the spring 45.

In the normal condition of the lock, the actuating member 32 can be turned by means of the key 30 and the bolt moved backward and forward accordingly. When it is desired to render the key-controllable mechanism inoperative relative to the bolt, the keeper 53 is moved aside, against the tension of the spring 55, by means of its projecting end, and the releasing member is drawn out against the tension of its spring; thereupon the keeper 53 is allowed to spring under the wings or projections 44 of the releasing member, and thus serves to hold this in an inoperative position against the tension of the spring 45. The pinion can then be turned as the bolt is moved backward and forward by means of the manipulating member 17, without affecting the key-controllable mechanism through the actuating member 33. To connect the latter and the pinion again it is merely necessary to press the end 53 of the keeper to allow the releasing member to be sprung back into its normal position. Should it be desired to permit the bolt to be secured from the inside so that it cannot be actuated manually or by the key-controllable mechanism, I employ a holding device 57 consisting of a double hook-shaped member pivotaly mounted upon the cover 11 of the casing, and adapted to have one or the other of its hooks engage the manipulating member 17, which is then located at one end of the slot 16, and is thus held against movement in either direction.

I employ a plurality of openings 18 so that the manipulating member can be adjusted relatively to the bolt to determine the part of the bolt length to be projected when the lock is closed. In this way the device can be adapted for doors or door frames of different dimensions and styles.

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

1. A lock comprising key-controllable mechanism, a slidable bolt having a rack, a pinion in mesh with said rack, and a sep-

arate releasing member between said pinion and said key-controllable mechanism and movable relatively thereto, though operatively connected therewith.

5 2. A lock comprising key-controllable mechanism, a slidable bolt having a rack, a pinion in mesh with said rack, a releasing member movable relative to said pinion and adapted to connect the same and said key-
10 controllable mechanism operatively, means tending to hold said releasing member in a normal position, and a keeper for holding said releasing member in an inoperative position.

15 3. A lock comprising key-controllable mechanism including an actuating member, a slidable bolt, a rotatable member in operative relation with said bolt, and a releasing member movably connected with said
20 actuating member and adapted in a predetermined position to engage said rotatable member to connect the same operatively with said actuating member, said releasing member being movable into an inoperative position.

25 4. A lock comprising key-controllable mechanism including an actuating member, a slidable bolt having a rack, a pinion in mesh with said rack, and a releasing member movably connected with said actuating
30 member and adapted in a predetermined position to engage said pinion to connect the same operatively with said actuating member, said releasing member being movable
35 into an inoperative position.

5. A lock comprising key-controllable mechanism including an actuating member, a slidable bolt having a rack, a pinion in mesh with said rack, and a releasing member
40 movably connected with said actuating member and adapted in a predetermined position to engage said pinion to connect the same operatively with said actuating member, said releasing member being movable
45 into an inoperative position, a spring tending to hold said releasing member in a nor-

mal, operative position, and a keeper adapted to engage said releasing member to hold the same in an inoperative position against the tension of said spring.

50 6. A lock comprising key-controllable mechanism including an actuating member, a slidable bolt having a rack, a pinion in mesh with said rack, a releasing member movably connected with said actuating member and adapted in a predetermined position
55 to engage said pinion to connect the same operatively with said actuating member, said releasing member being movable into an inoperative position, means whereby
60 said bolt can be manually operated independently of said key-controllable mechanism when said releasing member is inoperative, and further, independent means for holding said bolt against movement.

65 7. A lock comprising key-controllable mechanism including a slotted actuating member, a slidable bolt having a rack, a pinion in mesh with said rack and having a bore receiving said actuating member, a sleeve
70 loosely mounted in said bore and receiving said actuating member therein, said sleeve having a pin extending through said slotted actuating member, whereby the longitudinal
75 movement of said sleeve is limited, said pinion having a split collar, said sleeve having a projection adapted to engage said split collar to connect said pinion and said actuating member, a spring tending to hold said sleeve
80 in a normal, operative position, and a pivoted, spring-pressed keeper adapted to engage under said projection when said sleeve is drawn from its normal position to hold said sleeve inoperative.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RAFFAELE FEOLA.

Witnesses:

JOHN K. BRACHOOZEL,
JOHN P. DAVIS.