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W. W. FESSLER.
DOOR LOCK.

APPLICATION FILED MAR. 28, 1906.

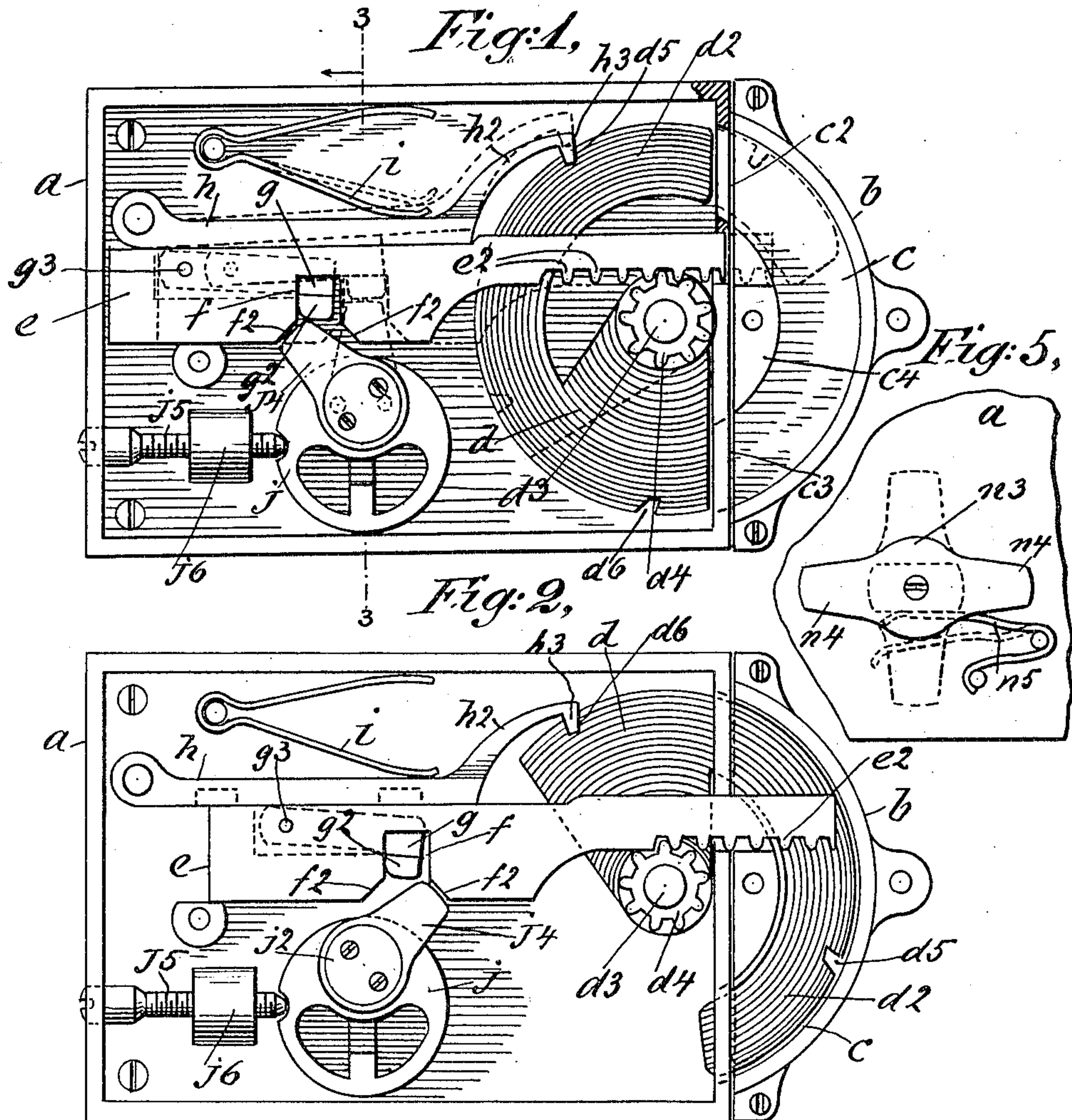


Fig. 3,

Fig. 4,

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DOOR-LOCK.

No. 843,200.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WALTER W. FESSLER, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Door-Locks, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to door-locks; and the object thereof is to provide an improved device of this class which is simple in construction and operation and composed of but few parts and which when in operation cannot be "picked" or forced by the insertion of a tool or instrument between the door and door-frame or by cutting away a part of the door-frame in order to insert a tool or instrument for the purpose of operating the lock so as to open the door.

This invention is an improvement on that described and claimed in United States Letters Patent granted to me March 13, 1906, No. 815,009, and is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a front view of my improved lock and showing the front plate of the separate parts thereof removed and also showing the parts of lock in inoperative position; Fig. 2, a similar view showing the parts of the lock in operative position; Fig. 3, a transverse section on the line 3-3 of Fig. 1 and showing the lock secured to a door; Fig. 4, a view similar to Fig. 3, but showing a modification; and Fig. 5, an inside view of one of the lock-operating devices which is secured to the inner side of the lock or to the inner side of the door.

In the practice of my invention I provide a casing *a*, adapted to be secured in or to a door in the usual manner, and a keeper *b*, adapted to be secured in or to a door-frame in the usual manner. The keeper *b* is provided with a curved or arc-shaped passage *c*, which opens through the face of said keeper at or near the top and bottom thereof, as shown at *c*² and *c*³, and said keeper in practice is preferably cast in the desired form from any suitable metal, and the face thereof is provided with a central portion *c*⁴, which separates the openings *c*² and *c*³ of the curved

or arc-shaped passage *c*. In Figs. 1 and 2 of the drawings the face-plate of the keeper *b* is removed; but it will be understood that the said keeper in practice is provided with a face-plate, especially when the lock or the parts thereof are secured to the inner side of the door and door-frame, as shown in Figs. 3 and 4; but when the parts of the lock are secured in the door and in the frame the face-plate of the keeper need not necessarily be employed.

Pivoted in the inner end of the casing *a* is a plate *d*, which is preferably segmental in form and provided with a curved arm *d*², the outer edge of the plate *d* and arm *d*² in the form of construction shown being formed on the arc of a circle the center of which is the pivotal point of the plate *d*. The pivot of the plate *d* consists of a pin or similar device *d*³, with which is connected a pinion *d*⁴, and in practice the pin *d*³ may be stationary, and the plate *d* and pinion *d*⁴ may be secured together, so as to turn on said pin, or said plate and pinion may be secured to said pin and said pin may be rotatably mounted.

Mounted centrally and longitudinally of the casing *a* is a lock-bolt *e*, the front end of which is narrower than the rear end portion thereof and provided in the bottomside thereof with teeth *e*², which mesh with the teeth on the pinion *d*⁴, and formed in the bottom of the rear end portion of the bolt *e* is a recess *f*, the bottom side walls of which are cut away to form beveled shoulders *f*², and the rear end portion of the bolt *e* is provided with a longitudinal recess *e*³, in the rear end portion of which is pivoted a forwardly-directed and vertically-movable dog *g*, provided at its front end with a transverse head *g*², the ends of which extend transversely through the bolt *e* in the recess *f*.

The pivotal point of the dog *g* is at *g*³, and pivoted over the rear end portion of the bolt *e* is an arm *h*, which extends forwardly and normally rests on the bolt *e* and the front end of which is provided with an upwardly and forwardly curved finger *h*², having a hook member *h*³, adapted to enter recesses *d*⁵ and *d*⁶ in the arm *d*², and placed in the casing *a* over the arm *h* is a spring *i*, which normally bears on said arm and forces it outwardly onto the bolt *e*.

In the form of construction shown in Figs. 1 to 5, inclusive, a drum *j* is passed through the door *k* and screwed into the back of the casing *a*, and in this drum is a rotatable cyl-

inder j^2 , adapted to be operated by a key j^3 in the usual manner, and the inner end of the rotatable cylinder j^2 is provided with a bit j^4 , and by rotating the cylinder j^2 by means of the key j^3 the bit j^4 may be made to operate the bolt e or project said bolt, as shown in Fig. 2, or withdraw said bolt, as shown in Fig. 1.

When the bolt e is projected, as shown in Fig. 2, the plate d is turned and the arm d^2 is forced through the keeper b , as clearly shown in Fig. 2, and when said bolt is withdrawn this operation is reversed, the plate d is returned to the position shown in Fig. 1, and the arm d^2 is also withdrawn into the casing a .

In the operation of the cylinder j^2 and the bit j^4 thereof, supposing the parts to be in the position shown in Fig. 1, the said cylinder is turned to the left. In this operation the bit j^4 strikes the head g^2 of the dog g and raises said dog, and this operation raises the arm h and throws the finger h^2 out of engagement with the arm d^2 . As the cylinder j^2 is turned farther to the left the bit j^4 strikes the forward beveled shoulder f^2 of the bolt e and moves said bolt forwardly, and this operation projects said bolt and turns the plate d and the arm d^2 into the position shown in Fig. 2. In this position of the parts the finger h^2 of the arm h or the hook or nose h^3 of said finger engages the recess d^6 in the plate d , and the door is securely locked.

In unlocking the door the key j^3 is inserted and the cylinder j^2 turned to the right, and in this operation the bit j^4 raises the dog g , which latter raises the arm h , and the finger h^2 of said arm is disengaged from the recess d^6 , and as the cylinder j^2 is turned farther to the right the bit j^4 strikes the rear beveled shoulder f^2 and forces said bolt backwardly, as shown in full lines in Fig. 1, and the door is unlocked.

The drum j is held against rotation by a screw j^5 , passed through a stud or bearing j^6 , and that part of the lock comprising the drum j , cylinder j^2 , and key j^3 is of the ordinary "Yale" type; but these parts may be constructed in any desired manner, and in Fig. 4 I have shown a modification in which the drum j is omitted and an ordinary key m is passed through a keyhole m^2 , formed in the door, and the key m is provided with a bit m^3 , which takes the place of the bit j^4 , and in this way the dog g and bolt e may be operated by an ordinary key passed through the door.

The inner side of the casing a is provided with an ordinary knob n , having a shank n^2 , which is passed through the face-plate of said casing and the inner end of which is provided with a plate n^3 , having bits n^4 , which extend in opposite directions, normally forwardly and backwardly, and which are held in their normal position by a spring n^5 , and

by means of knob n the parts of the lock may be operated from the inner side of the door exactly the same as from the outer side thereof by means of the cylinder j^2 or the key m , the bits n^4 serving when the knob n is turned in one direction to project the bolt e and in the other direction to withdraw said bolt, said bits operating in connection with the dog g or the head g^2 thereof.

When the parts of the lock are in their operative position, the arm d^2 extends entirely through the keeper b , the end thereof extending back into the casing a , and with this construction it is impossible to insert a tool or instrument between the door and door-frame so as to operate the lock, and that part of the door-frame cannot be cut away so as to insert a tool or instrument for the purpose of forcing the lock unless the keeper b is entirely cut out or removed from the door.

The forward end of the bolt e when the parts of the lock are in their operative position, as shown in Fig. 2, also extends into the keeper b and forms a supplemental lock-bolt, the arm d^2 and the forward end of the bolt e both serving as lock purposes, and in this way the lock is made much stronger and more effective.

My invention is not limited to any particular form of key device for operating the dog g , the arm h , and the bolt e , and any suitable device or devices may be employed for this purpose, and various changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A lock comprising a lock-casing adapted to be secured to or in a door, and a keeper adapted to be secured to or in a door-frame, the keeper being provided with a curved passage which opens through the face thereof at two different points and the lock-casing being provided with a pivoted plate having a curved arm adapted to be projected through said keeper and back into said casing, a pinion connected with said plate, a bolt mounted longitudinally in the lock-casing and provided with teeth operating in connection with said pinion and adapted to be projected into said keeper, a pivoted spring-depressed arm resting on said bolt and adapted to engage said curved arm at two different points, and a dog pivoted in said bolt and adapted to raise the spring-depressed arm, said dog and said bolt being both adapted to be operated by a key.

2. A lock comprising a casing adapted to be secured to or in a door, and a keeper adapted to be secured to or in a door-frame, a member pivoted in said casing and provided with a curved arm adapted to be projected through said keeper and back into said cas-

ing, a pinion connected with said member, a bolt mounted longitudinally in the casing and provided with teeth operating in connection with said pinion and also adapted to be
5 projected into said keeper, a spring-depressed device resting on said bolt and adapted to engage said arm at two different points, and a dog pivoted in said bolt and adapted to raise the spring-depressed device, said dog and
10 said bolt being both adapted to be operated by a key.

3. A lock comprising a casing adapted to be secured to or in a door, and a keeper adapted to be secured to or in a door-frame, a mem-
15 ber pivoted in said casing and provided with a curved arm adapted to be projected through said keeper, a pinion connected with said member, a bolt mounted longitudinally

in the casing and provided with teeth operating in connection with said pinion and also 20 adapted to be projected into said keeper, a spring-depressed device resting on said bolt and adapted to engage said arm at two different points, and a dog pivoted in said bolt and adapted to raise the spring-depressed device, 25 said dog and said bolt being both adapted to be operated by a key.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 30 27th day of March, 1906.

WALTER W. FESSLER.

Witnesses:

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