Oct. 16, 1934. H. K. DALTON 1,977,430

LOCK FOR DOORS AND OTHER OPENABLE DEVICES

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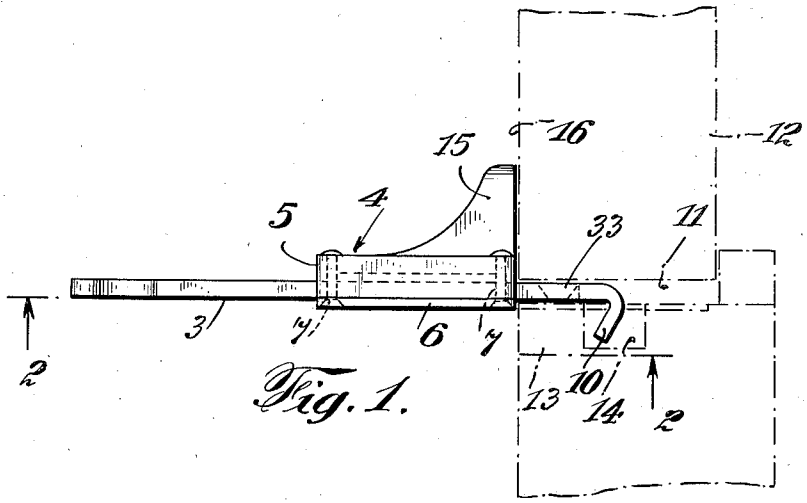


Fig. 1.

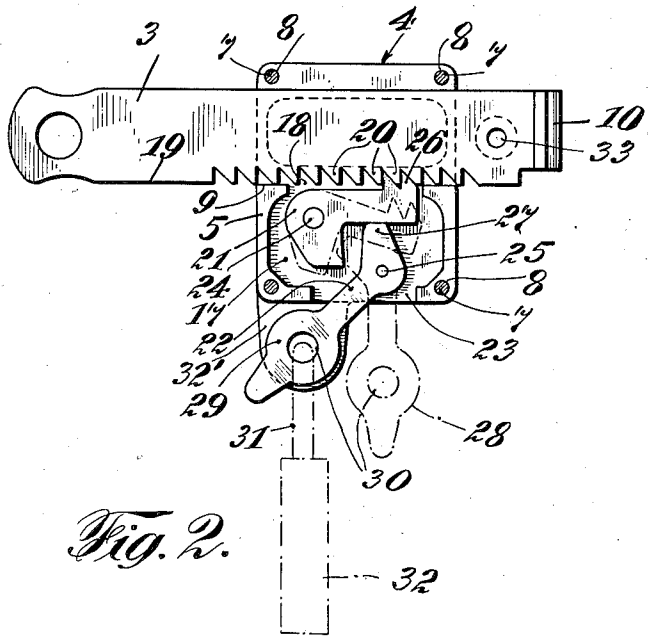


Fig. 2.

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LOCK FOR DOORS AND OTHER OPENABLE DEVICES

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5 Claims. (Cl. 292—296)

My invention relates to improvements in locks for use in connection with doors or the like, and has for an object the provision of an improved construction of this character provided with improved means for securing the door in closed position and making the same fast with the door frame against opening movement.

One object of the invention is to provide an improved lock having features of adjustability, adapting it to be used with different styles or types of doors, irrespective of their individual thickness or particular mode of mounting.

Another object is to provide a device which, when the door is to be secured, may be quickly applied thereto without the use of tools or the like, and which may be laid aside or stored away when it is not to be used for securing the door. An advantage of my invention is that it may be used by travelers or other persons for securely fastening the door of a temporary or strange abode.

A further object is to provide a simple and practical lock construction of the character described which is capable of use in connection with either a left-hand or a right-hand door.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter more fully described with reference to the simple and practical example illustrated in the accompanying drawing, in which:

Figure 1 represents a top plan view of a lock made in accordance with my invention, the same being shown in connection with fragmentary portions of a door and door frame shown in dash-dot outline; and

Fig. 2 represents a side elevation of my device, with one side of the casing removed in order to exhibit the interior parts and cooperation thereof.

The invention is herein described as embodied in a door lock, but it is equally applicable to desk drawers, filing cabinets and a large variety of uses.

Referring with more particularity to the accompanying drawing, it will be seen that the lock of my invention is represented as comprising two slidably associated devices consisting of a support in the form of a rack bar 3 and a fixture in the form of a casing denoted in general by the reference character 4 and which consists of a rectangular box-like body 5 and a side or cover 6 for the same. As herein represented, said side or cover 6 is secured to the box-like body by means of rivets 7 which, after being passed transversely through the cover, are engaged with openings 8 suitably provided for the purpose in the body part 5, and then upset. The box-like casing then becomes permanently closed, in a manner that it cannot be opened except by destruction thereof.

Adjacent one end, the body part 5 is provided with a channel 9 in which the rack bar is slidably disposed, it being noted that said channel 9 is provided entirely through the opposite sides of the body part for the projection of the rack bar in both directions from the body part. As will be seen from Fig. 1, the cover 6, when applied to the body part, serves as means whereby to retain the rack bar slidably in place. By this arrangement, the rack bar serves as a support for the fixture or casing 4 which can be readily moved or slid along the length of the rack bar. One end of the rack bar is formed with an over-bent portion or hook 10 adapted, when the device is applied in a position in which it will come between the free edge 11 of the door 12 and the adjacent door frame 13, to be engaged with the usual latch-receiving fitting or keeper 14 customarily found in a door frame. The body part 5 is formed with a lateral projection or abutment 15 adapted to engage the face 16 of the door, and it will be noted that this abutment 15 projects from the casing in a direction opposite to that in which the hook 10 extends, so that when the hook is applied to the keeper and the door closed, the casing may be moved along the rack bar until the abutment engages the face 16 of the door.

The body part 5 is formed with a chamber 17 which is in open communication at 18 with the channel 9, and along its longitudinal edge 19 the rack bar is provided with a series of teeth 20, adjacent the opening 18, where to be accessible for engagement by locking means operatively arranged in the chamber 17. In the present embodiment, the locking means is represented as comprising a locking lever made in the form of a bell-crank 21 and an operating lever 22 which projects through a suitable opening 23 so as to be operated from the exterior of the casing. The levers 21 and 22 are pivotally mounted within the chamber 17, the former being mounted upon a stud 24 and the latter upon a stud 25. The long arm of the bell-crank lever 21 is provided with projecting teeth 26 adapted to interlock with the teeth 20 of the rack bar. The lever 22 is provided with a contact end 27, and this lever is so pivoted with respect to the bell-crank that the contact end 27 will be adapted, upon moving the lever 22 into its dash-dot position 28 as shown in

Fig. 2, to engage the short arm of the bell-crank and move the bell-crank in a direction to effect disengagement of the teeth 26 from the teeth 20 whereby to release the rack bar; and also so that when the lever 22 is moved reversely or into its full-line position, said contact end 27 will engage the long arm of the bell-crank and force the latter into that position in which the teeth 26 will engage the teeth 20 thereby locking the casing and rack bar together. In this connection it will be observed that the lever 22 is so arranged and its contact end 27 so formed that when this lever occupies its full line position, its contact end 27 will firmly maintain the bell-crank in that position in which its teeth 26 are interlocked with the teeth 20.

The lever 22, exteriorly of the casing, is provided with an enlargement 29 suitably apertured as at 30 for receiving suitable locking means such as the hasp 31 of a pad-lock 32. The body part 5 of the casing is provided with a projecting lug 32' also suitably apertured (aperture not shown) for receiving the hasp 31; and these parts are so arranged that when the lever 22 is moved into its full line position, its aperture 30 will register with the aperture of the lug 32' to enable the hasp of the pad-lock to be passed through the apertures of both the lever and the lug whereby to secure the lever to the lug and thereby prevent any reverse movement of the lever such as will permit disengagement of the teeth 26 from the teeth 20.

In the use of my device, the casing is slid along the rack bar in a direction away from the hook 10 so that the rack bar may be applied against the door frame and the hook engaged in the keeper 14, whereupon the door is closed and the casing slid forwardly along the rack bar until the abutment 15 engages the face 16 of the door, when the operating lever 22 is moved to its full line position so as to move the bell-crank into interlocking engagement with the rack bar thereby securing the casing and rack bar together in that position in which the abutment engages the door. The pad-lock 32 or other suitable device is then applied so that the operating lever cannot be moved reversely.

The device of my invention is adapted to be used in connection with either a right-hand door or a left-hand door since the hook 10 and the abutment 15 project in opposite directions for engaging respectively the keeper in the door frame and that face of the door which comes at the inside of the room. It will be recognized, from this arrangement, that in order to change from a right-hand door to a left-hand door it is only necessary to invert the entire device. Where desired, the rack bar may be permanently attached to the door frame by means of a screw or the like which is entered in the opening 33 of the rack bar and engaged with the door frame, the said opening 33 being suitably countersunk for receiving the head of the screw so as not to interfere with the closing of the door.

While I have illustrated and described in detail the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth and described, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

I claim:—

1. In a lock, the combination with a rack bar and a fixture slidable along the bar, of means for securing the fixture to the bar, comprising a pivoted locking lever adapted to lock with the rack bar, an operating lever adapted to engage and move the locking lever and effective in one position to hold the same in locking engagement with the rack bar, said operating lever having a portion projecting from the end of the casing remote from the bar, and an integral projection on the fixture to which to secure the projecting portion of the operating lever to retain the operating lever in effective position.

2. In a lock, the combination of a bar adapted to engage the door frame and provided with interlocking means, a casing slidably mounted on the bar and having a projecting portion at one edge provided with an eye, a pair of levers pivoted within the casing, one of which is adapted for engagement with the interlocking means of the bar, and the second of which is adapted to move the first into and out of engagement with said interlocking means, said second lever being movable in a plane parallel with the plane of said projecting portion and having an extension extending exteriorly of the casing and provided with an eye adapted to register with the eye of the projecting portion, and means adapted to pass through both the eyes for securing the lever to the projecting portion of the casing.

3. A lock having, in combination, a bar, a casing slidable along the bar and provided with an extending lug, said bar extending through the casing and provided with rack teeth engageable within the interior of the casing, a locking lever pivoted within the casing and adapted to interlock with the rack teeth to lock the bar and casing together, said locking lever having two arms, and an operating lever pivoted to and within the casing and adapted, when moved in one direction, to engage one of said arms for moving the locking lever into locking engagement with the rack teeth, and when moved in a reverse direction, to engage the other of said arms for moving the locking lever out of its engagement with the rack teeth, said operating lever extending outside the casing and cooperating with said lug for securement to the latter when the locking lever and rack teeth are in locking engagement.

4. In a lock for doors, the combination with a hollow casing slidable along a bar having teeth in its longitudinal direction, of two separate levers individually pivoted to and within the casing, one comprising a locking lever in the form of a bell crank one arm of which is toothed for interlocking engagement with the teeth of the bar, the second lever being arranged to operate the locking lever and having one end working between the two arms of the locking lever for alternately engaging the same, its other end extending beyond the casing to afford a finger piece whereby to be operated, the operation of said second lever being limited in one direction by the interlocking engagement of the locking lever with the bar and the second lever being effective at such limit of movement and until reversed therefrom to firmly maintain the locking lever in interlocking engagement with the bar.

5. In a lock for a door which includes a bar having rack teeth along one of its longitudinal edges, a casing mounted on the bar to slide in the direction of the length thereof and provided with a projecting lug, two levers pivoted to and within the casing, one comprising a bell crank one arm of which is toothed for engagement

with the teeth of the bar, the second lever having at one end thereof an abutment portion disposed between the two bell crank arms and adapted to act alternately thereon so as to move the bell crank in either direction for effecting engagement and disengagement of the toothed arm with the teeth of the bar, the movement of the second lever being limited in one direction by the engagement of the toothed bell crank arm with the bar, an integral extension on the other end of the second lever disposed for movement in a plane parallel with that of said lug, and means for securing said extension to said lug when said second lever attains its limit of movement by reason of the engagement of said toothed arm with the bar.

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