May 10, 1949. G. A. LEE 2,469,601

DOOR LATCH

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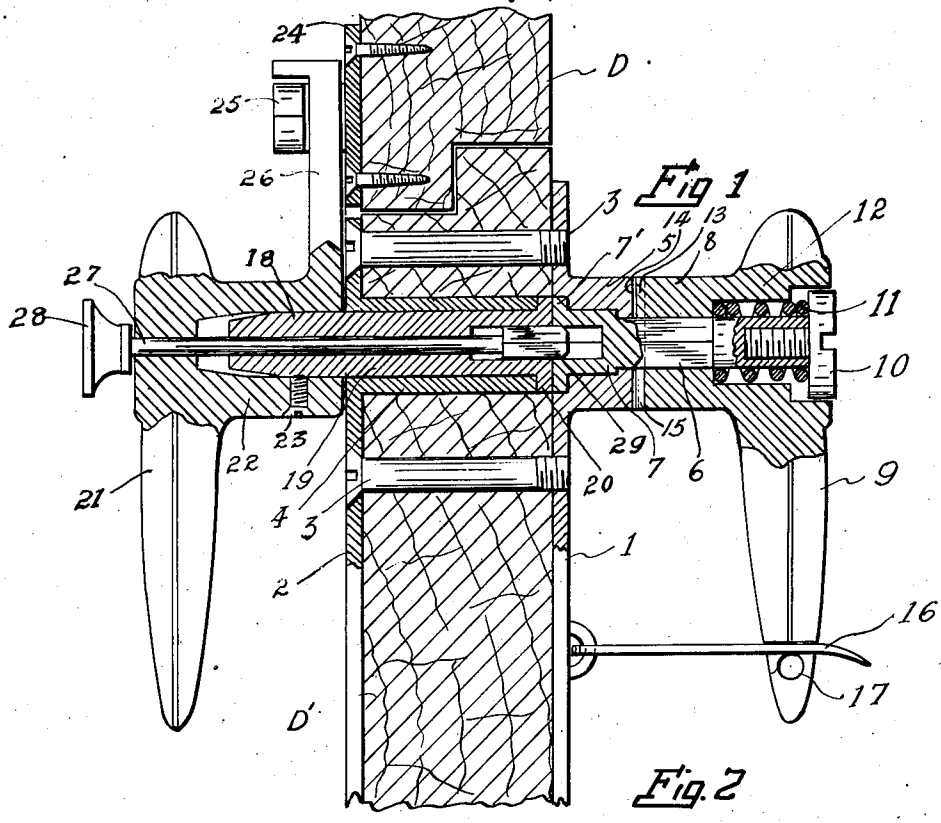


Fig. 1

Fig. 2

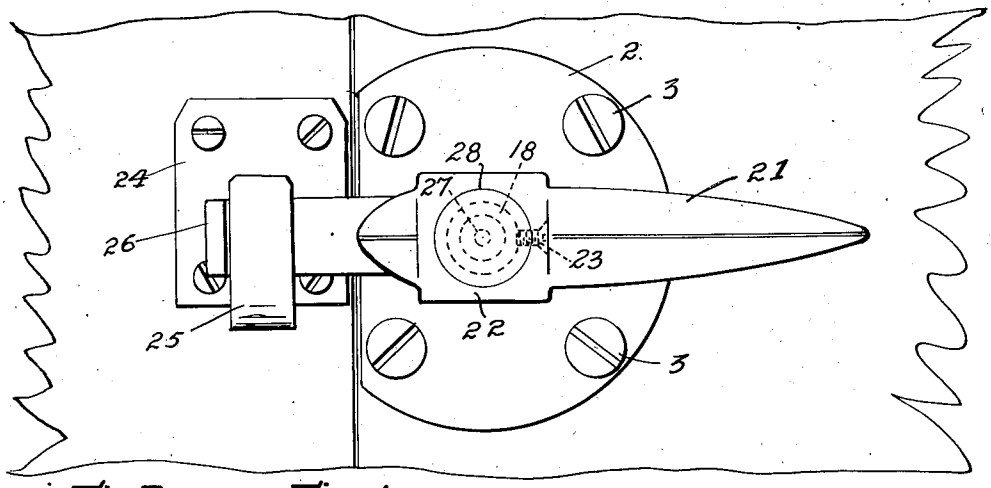


Fig. 3

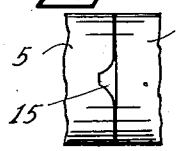
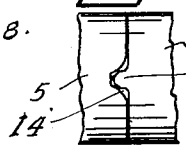


Fig. 4



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DOOR LATCH

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2 Claims. (Cl. 292—202)

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The present invention relates to an improved door latch-lock adapted to latch, and to lock, two doors together, or to latch and lock a single door to its surrounding frame or casing.

The latch-lock of my invention is especially designed for use with a pair of garage doors, and means are provided in the form of an inner latch operating member and an outer latch member or unit, whereby the doors may be latched together and openable from either the outside or the inside of the garage; the doors may be locked at both the inner and outer sides; and the doors may be fastened against opening from the outside but readily unlatched from the inside.

An adjustable connector or slide bolt is adapted for coaction with the inner and outer latch operating units, and the bolt is operable from the inside of the doors for the performance of its functions.

In carrying out my invention a minimum number of parts are employed to insure a compact arrangement of parts together with simplicity in construction and operation of the appliance for both locking and latching purposes.

In the accompanying drawings one complete example of the physical embodiment of my invention is illustrated wherein the parts are combined and arranged in accord with one mode I have so far devised for the practical application of the principles of my invention, but it will be understood that changes may be made in these exemplifying drawings without departing from the principles of my invention.

Figure 1 is a horizontal sectional view at the meeting edges of two doors with which the latch-lock of my invention is embodied and also shown in section.

Figure 2 is a face view of the latch-lock at the inner side of the door.

Figures 3 and 4 are detail views showing the detent and its notches for the outer latch-handle of the device.

In the assembly view of Figure 1 two doors D and D' are indicated, and it will be apparent that the member indicated as D might be a fixed or stationary door frame to which the door D' could be locked or latched.

On the outer or right hand side of the door D' an attaching plate 1 is mounted, and on the inner or left hand side of the same door an attaching plate 2 is mounted, the plates being fastened by screws; and between these plates the door is mortised to accommodate some of the parts of the latch-lock.

In the mortised or recessed door an enclosing

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sleeve 4 is mounted, said sleeve being of cylindrical shape, integral with the inner plate 2, and its open end terminates just short of the outer end of the door-mortise. The outer plate 1 is fashioned with a tubular bearing boss 5 axially alined with the supporting sleeve or tubular bearing 4, and this bearing boss is integral with the outer face plate 1.

The outer latch operating unit includes a slidable and rotatable shank having a squared portion 6, and an inner enlarged tubular head 7 terminating in an annular exterior flange 7'. The shank is mounted in the bearing boss 5 so that the flanged head may be turned in the boss as a bearing, and the angular or squared portion 6 of the shank provides a support for the outer latch operating unit of the device. This unit includes a tubular hub 8 having an angular bore slidable on the angular shank, and an integral latch-handle 9. By means of a large headed screw 10 threaded in the outer end of the shank, and a spring 11 coiled about the shank and located in a socket 12 of the hub, the hub 8 is held in close contact with the outer face of the bearing boss 5. The spring is interposed between the head of the screw and an inner wall of the recess 12 so that by grasping the handle 9 and pressing the thumb against the screw head, the handle and its integral hub may be withdrawn from contact with the boss.

For retaining the outer latch operating unit against accidental turning movement with relation to the boss 5, and as best seen in Figs. 3 and 4, the hub is fashioned with a detent 13 adapted to alternately engage the notches 14 and 15 in the adjoining outer face of the stationary bearing boss 5, and the spring 11 holds the detent in its selected notch for this purpose.

For locking the outer latch operating unit from the outside a hasp 16 is pivoted on the outer face of the door D' and adapted to slip over the handle or lever 9, and a padlock (not shown) may be inserted through hole 17 of the lever to lock the latch operating unit.

The inside latching unit includes a tubular spindle having an angular or square end 18, and a solid cylindrical end portion 19 that terminates in an annular exterior flange 20 that bears against the outer face of the sleeve 4. The cylindrical portion 19 of the spindle is adapted to turn within the sleeve, and the flange 20 contacts the flanged socket head 7 so that the axially alined spindle and shank 6 may or may not be united to turn in unison, or to turn relatively to one another.

The inner latch handle 21 is fashioned with an

integral hub 22 mounted on the angular end of the spindle, and the handle is adjustable on the spindle to adapt the latch-lock for use with doors of varying thickness, and a set screw 23 is utilized to fix the latch handle in adjusted position.

To complete the inside latch unit an attaching plate 24 is secured on the inner face of the door D, and this plate is fashioned with a keeper 25 for the latch bolt 26 integral with the hub of the latch handle.

The two latch operating units may be coupled together, or connected together, to perform the functions of a latch, in the absence of the padlock above referred to, and these functions may be performed from either the inside of the door or from the outside of the door. When the padlock is used the outer latch operating unit may be locked against turning by the padlock; and selectively, the two latch operating units may be locked by the padlock. In addition, the door may be latched by the inner latch operating unit, and in the absence of the padlock the outer latch operating unit may be rendered ineffective to open the door from the outside; thus providing an inaccessible inner latch that is capable of holding the door against opening movement from the outside.

For operatively connecting the two latch operating units, and for disconnecting the units to render the outer unit ineffective I provide a push and pull slide key 27 mounted in the inner latch operating unit and operative, only, from the inside of the door through manipulation of the button or head 28. The key is slidably mounted in alined bores of the hub 22 and the tubular spindle 19, and the key terminates in an enlarged head 29 that performs the functions of a slide bolt that may connect and unite the rotatable spindle with the rotatable socket head 7 of the outer handle. In Fig. 1 the slide bolt is in position to connect the two latches for operative turning movement, and when the hasp 16 is detached from the handle 9 the door D' may be unlatched from either the inside or the outside.

By a pull on the head or button 28 the key is moved away from the socket head 7 and the bolt 29 is withdrawn from the socket-head 7, and under this condition the door may be unlatched from the inside, but not from the outside because the outer handle is disconnected from the inner latch operating unit.

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

1. In a latch lock for a door including an inner rotatable latch operating handle and an outer rotatable latch operating handle, the combination with an inner attaching plate having a cylindrical sleeve thereon adapted to extend into the door, and terminate adjacent to the outside surface of the door, an outer attaching plate having an inwardly facing recess aligned with the sleeve and spaced therefrom, of a tubular spindle journalled in the sleeve and having an exterior flange bearing on the end of said sleeve, said spindle being secured to the inner operating handle, a shank having a flange seated in the recess of the outer plate and extending out through said plate rotatable with the outer operating unit, a push and pull key slidably mounted in the spindle and having a connector carried thereby, the spindle and shank having seats in their adjoining end portions for the connector whereby they may be secured thereby to rotate together.

2. In a latch lock for a door including an inner rotatable latch operating handle and an outer rotatable latch operating handle, the combination with an inner attaching plate having a cylindrical sleeve thereon adapted to extend into the door and terminate adjacent to the outside surface of the door, an outer attaching plate having an inwardly facing recess aligned with the sleeve and spaced therefrom, of a tubular spindle having a portion non-rotatably mounted in said inner handle and a cylindrical portion journalled in the sleeve and having an exterior flange bearing on the end of said sleeve, a shank having a flange seated in the recess of the outer plate and extending out through said plate rotatable with the outer operating unit, a push and pull key slidably mounted in the spindle and having a connector carried thereby, the spindle and shank having seats in their adjoining end portions for the connector whereby they may be secured thereby to rotate together.

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