Dec. 9, 1952 R. LEVANE 2,620,645

LATCH WITH LOCK DOGGING MEANS

Filed May 16, 1950

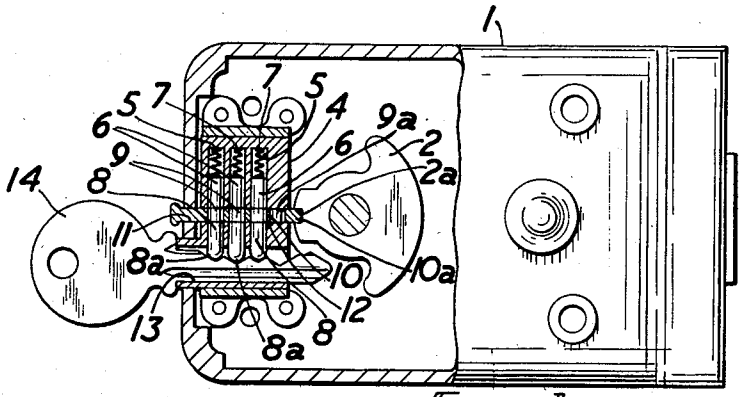


FIG. 1.

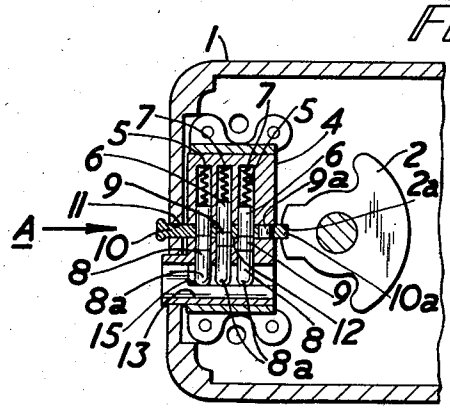


FIG. 2.

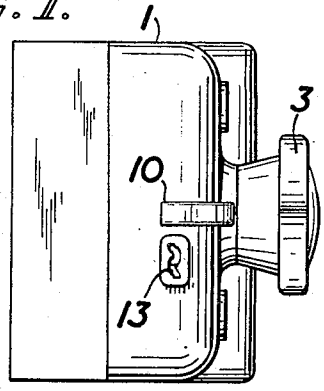


FIG. 3.

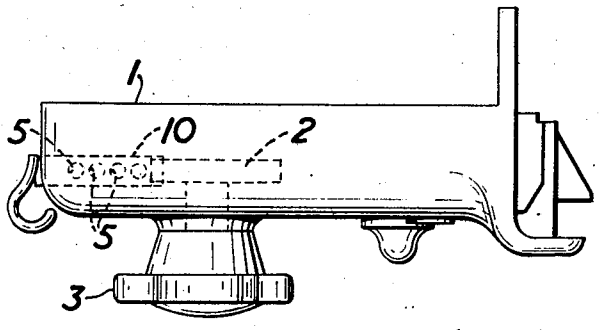


FIG. 4.

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Patented Dec. 9, 1952 2,620,645

UNITED STATES PATENT OFFICE

2,620,645

LATCH WITH LOCK DOGGING MEANS

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Application May 16, 1950, Serial No. 162,263
In Great Britain May 23, 1949

3 Claims. (Cl. 70—153)

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This invention relates to locks and has reference particularly to door latching locks of what is generally known as the "Yale" type provided with means for positively locking the handle or knob. The invention is concerned with the construction of locking mechanisms which will preclude the possibility of the lock being operated either from the inside or the outside of the door except by the use of the appropriate key.

In accordance with the invention I provide the member inside the lock casing, which is operated by the turning of the knob or handle of the lock, with a recess in which a slidable locking bar is located when the locking mechanism is in operation.

This sliding locking bar runs through a passage in a block which, when the key is inserted, is completely unobstructed so that the locking bar can move freely within the limits of movement provided.

Removal of the key, however, results in the passage becoming automatically obstructed at one or more positions so that the slidable locking bar cannot be moved and the invention consists broadly of mechanism for dead locking a lock comprising a recessed element associated with the operating knob or handle of the lock, a locking bar adapted to be projected into locking engagement with the recessed element, said locking bar having at least one hole in it, a spring actuated piston like composite obstruction element disposed at right angles to said locking bar normally locking said locking bar against movement, said composite element consisting of three abutting component parts, the intermediate one of which being of the same dimensions as the hole in the locking bar, all the component parts being in alignment one with the other and with the hole in the locking bar and removable means operable to position the components of the composite obstruction element so that its intermediate component occupies the hole in the locking bar whereby the locking bar is freed to be slidden into and out of engagement with the recess of the element to be locked.

More specifically the invention consists of mechanism for dead locking a latch lock comprising a slidable locking bar adapted to be slidden into and out of locking engagement with the actuating element of the lock, said locking bar being provided with holes through it, a block located within the lock casing and having a passage in which said locking bar can slide, piston like spring actuated composite obstruction elements slidable in the block at right angles to the

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locking bar in alignment with holes in the locking bar, each of said composite obstruction elements consisting of three component parts, one of which when the locking bar is operable, is located above the locking bar, one is located below the locking bar and an intermediate one fills a hole in the locking bar, whereby when an appropriately profiled key is inserted through the casing of the lock below the lower ends of the composite obstruction elements it positions all the intermediate components of said composite elements in their appropriate holes in the locking bar to free the locking bar for operation.

In order that the invention may be readily understood reference is hereby made to the accompanying drawing, wherein:

Figure 1 is a sectional view showing an example of the improved locking mechanism with the locking bar in locking position but free to be withdrawn from its locking position,

Figure 2 is a view similar to Figure 1, with the key removed,

Figure 3 is an end elevation of Figure 2 looking in the direction of the arrow A, and

Figure 4 is a plan of Figure 1 with the control key removed and the locking bar in position dead locking the lock and no longer capable of being moved itself.

Referring to these drawings the numeral 1 designates the lock casing and the numeral 2 the element of the lock which is actuated by the knob 3 of the lock in the usual way to withdraw the latch of the lock against its usual spring. Within the casing 1 a block 4 is mounted and this block is provided with the three borings 5 in which are located piston like obstruction elements each of which consists of three component parts. That is to say each consists of a top component 6, which is subject to the influence of a compression spring 7, a lower component part 8 and an intermediate component part 9. The intermediate component parts 9 are of the same dimensions as holes provided in a locking bar 10 which is capable of sliding through an opening 11 cut in the casing wall and in a passage 12 aligned therewith cut in the block 4 at right angles to the composite obstruction elements 6, 8, 9. In the lower part of the block 4 a key way 13 is provided and in Figure 1 a key 14 is shown in position in the key way. The insertion of this key operates cam fashion on the noses 8a of the lower component parts of the obstruction elements and the profile of the key is such that when it is in the inserted position shown all the intermediate components 9 of the obstruction

elements are in alignment and occupy the holes in the locking bar 10. Thus in this position no obstruction is offered to the locking bar and it can be slidden in and out within the limits of its movement. In Figure 1 it is shown in its position with its end 10*a* projected into the recess 2*a* of the actuating element 2 of the lock. Thus the lock is dead locked when the locking bar is in the position shown. While the key remains in the lock the locking bar 10 can, of course, be moved outwardly to free the lock again. In Figure 2, however, the position is shown after the key has been removed and it will be observed that the springs 7 have pressed their composite obstruction elements down so that their noses lie in alignment on the base or platform 15 and in this position it will be seen the top components 6 have passed through the holes in the locking bar 10 thus locking it against displacement. When it is desired to remove the dead lock the key is inserted and the position shown in Figure 1 restored whereupon the locking bar 10 can be withdrawn and the dead lock removed leaving the lock free to be operated by the knob or handle 3 of the lock in the normal way.

This dead locking only affects the knob operation, the operation of the lock by the key from outside the door being effected in the usual way, the key operating a separate latch actuating element similar to the element 2 but, of course, without the recess 2*a*.

In addition to the locking bar obstruction elements before described there may be provided a fourth or additional intermediate element 9*a* located in a fourth or additional hole in the locking bar so arranged that the locking bar can be locked in a secondary position where the locking bar is disengaged from the knob or handle operated element of the lock. This additional element is positioned so that if the locking bar is pulled out of locking engagement it becomes the intermediate member of the rearmost composite obstruction element, the intermediate member of which becomes the intermediate member of the next locking bar obstruction element of the series and the intermediate member of the foremost or final locking bar obstruction element of the series passes to an inoperative position.

Thus the invention provides for two dead lock positions which both depend upon the insertion of the appropriate key to effect unlocking.

A lock having mechanism of the foregoing character provides security in cases where the lock is applied to glass panel doors and moreover precludes burglars from entering by a window and then slipping out by the door.

Although primarily designed as a means for dead locking the operating mechanism of ordinary locks in the manner described in the example illustrated it will be understood that the locking bar may itself constitute a dead locking mechanism. That is to say the sliding bar can itself operate as a bolt which when a key is positioned can be slidden into locking position, removal of the key dead locking the bolt.

What is claimed, is:

1. In a latch lock operable by actuation of a knob, a mechanism for dead locking said lock comprising a latch actuating element, a slidable locking bar adapted to be slidden into and out of locking engagement with the latch actuating element, said locking bar being provided with

holes through it, a lock casing, a block located within the lock casing and having a passage in which said locking bar can slide, piston like spring actuated composite obstruction elements slidable in the block at right angles to the locking bar in alignment with holes in the locking bar, each of said composite obstruction elements consisting of three component parts one of which when the locking bar is operable is located above the locking bar, one is located below the locking bar and an intermediate one fills a hole in the locking bar, said lock casing including a slot adapted to receive an appropriately profiled key, whereby when said key is inserted through the slot into the casing of the lock so as to be located below the lower ends of the composite obstruction elements it positions all the intermediate components of said composite elements in their appropriate holes in the locking bar to free the locking bar for operation.

2. Latch lock according to claim 1, wherein an additional intermediate component is provided in an additional hole in the locking bar positioned so as to be capable of replacing the intermediate component of the adjacent composite obstruction element whereby the locking bar can be locked in a secondary position.

3. A latch lock comprising, in combination, a latch actuable by a knob, a casing, an element within the casing actuable by the knob whose movement operates the latch and including a recess, a flat slidable locking bar having a hole through it, said locking bar being adapted to engage at one end in said recess to lock the element against movement by the knob, a block through which said locking bar slides having a hole in it disposed at right angles to said locking bar and aligned with the hole in said locking bar, a spring actuated piston-like composite obstruction element slidable in said hole and passing through the aligned hole in said locking bar, said composite piston element having three components consisting of an intermediate component corresponding to the size of the hole in said locking bar, a spring pressed component abutting said intermediate component at one end, and a continuation component abutting against the other end of said intermediate component, said casing being formed with a key slot into which the continuation component extends, the arrangement being such that the intermediate component fills the hole in the locking bar so as to permit movement of the locking bar only when a key is positioned in the key slot.

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