

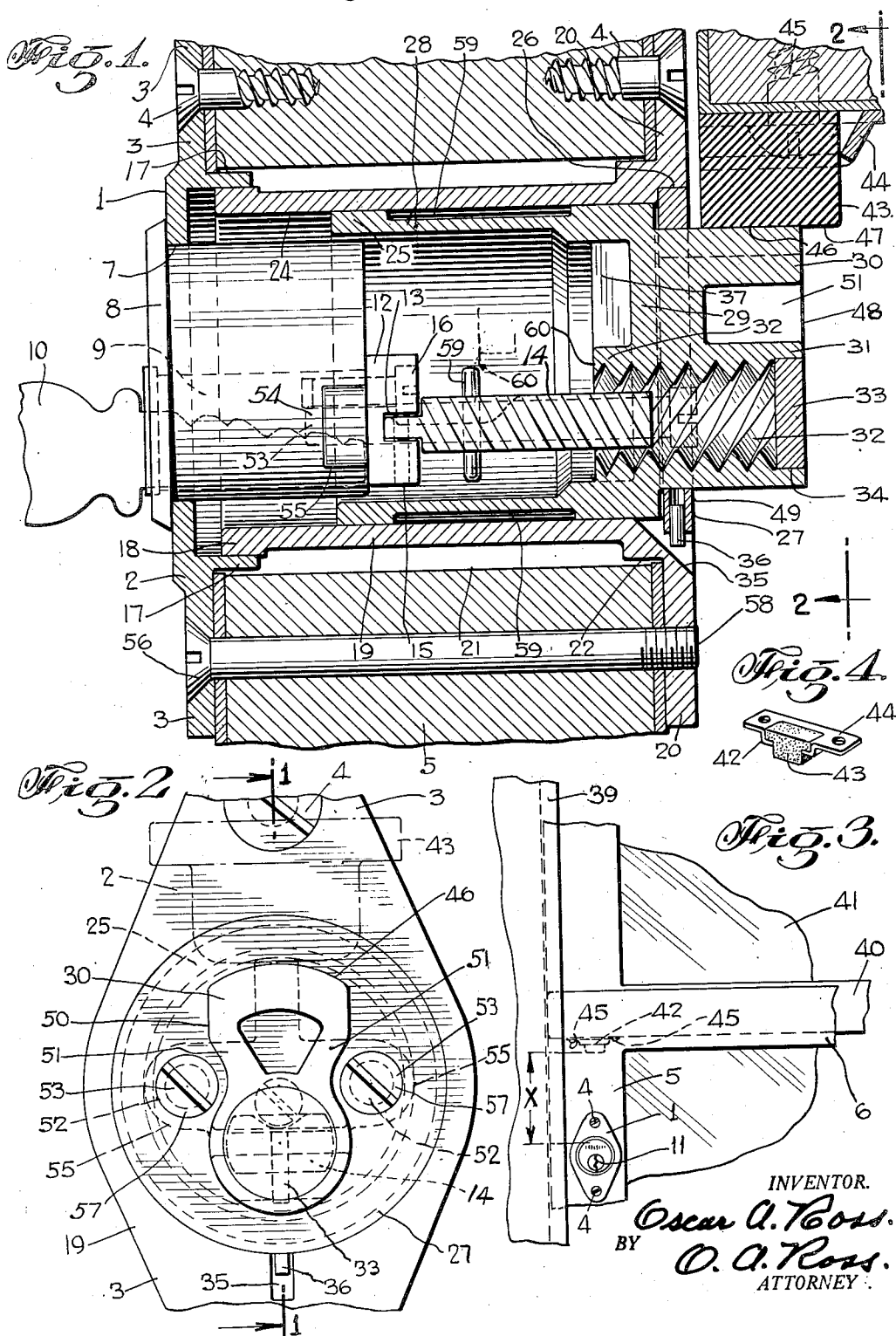
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WINDOW LOCK

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WINDOW LOCK

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This invention refers to window locks and more particularly to that class for application to sliding windows moved in planes relatively one to the other.

It is often found advisable to open a sliding window of the rise and fall type more generally employed in building construction. Permanent openings of such windows are more generally for the purpose of ventilation and may be sufficiently small to prevent an unauthorized person to enter therethrough. Whereas locking arrangements have been heretofore attached to such windows, with any appreciable opening, it is quite possible for an unauthorized person to insert simple tools and noiselessly release the locking arrangement whereby the window may be more widely opened for unauthorized entry by said unauthorized persons therethrough. It is therefore one object of this invention to furnish window locking means whereby windows may be opened within certain limits by authorized or unauthorized persons, the opening being sufficiently small to prevent unauthorized persons passing therethrough, the locking means being so arranged whereby only authorized persons may effect a larger opening of said windows.

Furthermore many large and tall hotels and apartment houses are being erected, the living quarters of which are at considerable heights above the ground, or street level. The number of persons who become dizzy when looking down from great heights is surprisingly large and as a result many accidents and even deaths have been recorded, due to persons either jumping, or falling from windows situated at considerable height above the ground. It is therefore another object of this invention to provide locking means for windows whereby tenants of hotels or apartments may open their windows sufficiently for ventilation, but cannot open said windows sufficiently to have egress therethrough.

Another object is to furnish a novel locking apparatus for rise and fall windows whereby the windows may be key locked to permit a comparatively small but variable opening for ventilation purposes but will prevent sufficient opening thereof whereby human beings may pass therethrough.

Another object is to furnish a novel key locking apparatus which may be applied to windows in a simpler manner than is customary and which will have a pleasing finished appearance.

Another object is to furnish an oval locking arrangement for windows whereby in opening the window the shock caused by the unexpected stopping of the window at the comparatively short

distance set by the lock when the intention was to raise the window to a greater distance will be resiliently absorbed.

Another object is to furnish a novel locking arrangement for windows whereby no movable mechanism is seen from the interior of the room.

Another object is to furnish a novel locking arrangement for windows wherein standard key cylinder lock units may be employed so that the window locks may be master keyed.

Another object is to furnish a novel locking arrangement for windows whereby the lower window may be raised, or the upper window may be lowered within certain limits and further opening thereof can only be effected by key operation by authorized persons.

Other objects and advantages will appear as the description of the invention progresses and the novel features will be pointed out in the appended claims.

In describing the invention in detail, reference is had to the accompanying drawing wherein like characters of reference designate like parts throughout the several views and in which:—

Figure 1 is an enlarged partly sectional view of a preferred form of applicant's invention taken on line 1—1 of Fig. 2, and Fig. 2 is an elevational view of the same taken on line 2—2 of Fig. 1, and Fig. 3 is a plan view of a window sash and windows therein fitted with applicant's novel locking apparatus, and Fig. 4 is a perspective view of a preferred form of shock absorber.

Referring to Figs. 1, 2, 3, and 4, the lock unit 1 comprises cylinder plate 2 having extensions 3—3 arranged to receive wood screws as 4—4 or a machine screw, as 56 for securing said plate to side member 5 of window frame 6, also orifice 7 arranged to receive cylinder lock unit 8 of known form having cylinder 9 arranged to be rotated by insertion of key 10 into slot 11 therein. To the inner end of cylinder 9 is secured disk member 12 having slot 13 arranged to receive one end of flat sided screw member 14, pin 15 acting to loosely allocate said screw member end in said slot, said disk member also serving to prevent removal of said cylinder and being secured thereto by screw 16.

Cylinder plate 2 is also formed with annular flange 17 arranged to receive cylinder portion 18 of barrel member 19 having extensions 20—20 similar to extensions 3—3 also secured to side member 5 by screws as 4, or machine screw as 56, said side member 5 being drilled to form the cylindrical orifice 21 arranged to receive the

shoulder 22 of said barrel member and flange 17 of cylinder plate 2.

Barrel member 19 is formed with a cylindrical bore 24 arranged to receive piston member 25, and a counter-bore 26 arranged to receive bolt plate 27. Said barrel member is also formed with slot 35 arranged to receive pin 36 secured in said bolt plate 27 whereby said plate is allocated in said barrel member, said slot also serving to drain any moisture which may accumulate within the locking unit 1.

Piston member 25 is formed with cylindrical portion 28 arranged to reciprocate in bore 24 of barrel member 19, also with a head portion 29 having a bolt portion 30 and also with a cylindrical portion 31 formed integrally with the head and cylindrical portions, said cylindrical portion being substantially co-axial with the cylinder 9 and formed with an internally threaded orifice 32 arranged to receive the threaded screw 14, a disk 33 secured in counter-bore 34 serving to seal said orifice. Said head and cylindrical portions are joined by re-enforcing ribs 37.

Referring to Figs. 3 and 4, to the under side of the bottom member 40 of upper window 41 is secured the shock absorber 42 comprising buffer 43 arranged to be clampably allocated by bracket 44 secured to said window by screws 45—45.

Referring to Figs. 1 and 2, the bolt plate 27 is formed with an orifice 50 arranged to receive bolt portion 30, cylindrical portion 31 and the re-enforcing ribs 51—51 therebetween. Said plate is also formed with orifices 52—52 arranged to receive screws 53—53, the threaded portion 54 of which is arranged to enter threaded bosses 55—55, said screws acting to allocate said bolt plate 27 in counter-bore 26 and cylinder unit 8 in orifice 7. The heads 57—57 of screws 53—53 are preferably sealed by the application of seals as more fully disclosed by applicant's co-pending application, Serial No. 180,798, filed April 4, 1927, whereby they cannot be removed by unauthorized persons.

Through bolts or machine screws as 56 may be employed at both the upper and lower extensions as 3—3 whereby the cylinder plate 2 and barrel member are clampably allocated to re-enforce the side member 5 and thereby compensate for any weakening thereof due to the forming of the orifice 21, the extensions 20—20 being suitably threaded to receive the threaded ends 58 of screw 56.

Bolt plate 27 may be permanently secured in counter-bore 26 by soldering, swedging or pinning, as may be preferred and whereby it cannot be removed.

Cylindrical portion 28 of piston 25 is preferably relieved by annular recess 59 to reduce weight and machining thereof.

Operation

The parts of lock unit 1 are normally positioned as shown, the screw 14 partially entering the threaded orifice 32, as shown, cylinder 9 being locked by the key operated pins in cylinder unit 8 in known manner. In Figs. 1 and 2, it is assumed the window 6 has been raised until the bolt face 46 has engaged the face 47 of buffer 43, the distance of opening being represented by the distance X, assumed to be approximately eight inches, or less depending upon the landlord's choice of location of the lock unit 1 on the side member 5.

Assume it is desired to open the windows 6 and 41 the entire distance of opening for the purpose

of window washing. An authorized person will insert the key 10 into slot 11 of cylinder 9 rotating said cylinder clock-wise thereby causing the threads of orifice 32 to be drawn onto the screw 14 by the rotation of said screw, in this manner moving piston 25 to the left within cylinder bore 24, said movement also causing bolt portion 30 to move to the left until its face 48 is substantially parallel with face 49 of bolt plate 27 and whereby the surface 45 is out of register with surface 47 of buffer 43, thus permitting the free movement of windows 6 and 41 without restraint by locking unit 1.

The lead of the threads of screw 14 and orifice 32 is preferably formed whereby the bolt 30 is withdrawn upon the cylinder being rotated approximately 300 degrees in this manner making it impossible to remove the key without again moving the piston 25 to the right whereby said bolt will intercept the buffer 43. Screw 14 is preferably drilled to receive a pin as 59 arranged to impinge on face 60 of cylindrical portion 32, said pin acting as the stop for the inward movement of said piston by the impingement of said pin against said face 60.

What I claim is:—

1. A locking device comprising, a substantially cylindrical housing, a cylindrical bore formed therein, a flanged portion formed at one end of the housing, another flanged portion formed at the other end of the housing, a key locked unit supported by one flanged portion, a bolt member having a cylindrical portion arranged to supportably reciprocate in the bore, a bolt portion formed thereon arranged to extend through the other flanged portion to the exterior of the device, and means operatively connecting the locking unit and the bolt member arranged to effect reciprocation of the bolt member as the locking unit is locked and unlocked with the key.

2. A locking device comprising, a substantially cylindrical housing, a cylindrical bore formed therein, a locking plate portion formed at one end of the housing, a bolt plate portion formed at the other end of the housing, a key locked unit supported by the locking plate portion arranged to extend into the bore of the housing, a bolt member having a cylindrical portion arranged to supportably reciprocate in the bore and surround the key locked unit during the retracting movement thereof, a bolt portion formed thereon arranged to extend through the bolt plate portion to the exterior of the device, and means operatively connecting the unit and the bolt member arranged to effect reciprocation of the bolt member as the unit is locked and unlocked by the key.

3. The combination with a body member having two substantially parallel exposed surfaces and an orifice formed therebetween substantially at right angles to the surfaces, of a locking device supported by the member correlatively to the orifice comprising, a key operated locking unit supported by the device, a key plate member for supporting the locking unit having the exposed face thereof positioned in a plane substantially parallel to the plane of one surface of the body member, a bolt plate member supported by the device, a bolt plate portion formed thereon having the bolt opening face thereof positioned in a plane substantially parallel to the other surface of the body member, a bolt member reciprocally supported by the device having a bolt portion arranged to operate in the bolt opening of the bolt plate member, and means

operatively connecting the locking unit and the bolt member arranged to effect reciprocation of the bolt member from one position to another as the locking unit is locked and unlocked.

4. The combination with a body member having two substantially parallel exposed surfaces and an orifice formed therebetween substantially at right angles to the surfaces, of a locking device supported by the member correlatively to the orifice comprising, a locking plate member arranged to be secured to one surface of the body member correlatively to the orifice, a tubular extension formed thereon positioned in the orifice, a bolt plate member arranged to be secured to the other surface of the body member, a tubular portion formed thereon positioned in the orifice arranged to matingly engage the tubular portion of the locking plate member whereby a substantially sealed enclosure is formed therebetween, a key locked unit supported by the locking plate member communicating with the enclosure, a bolt member arranged to reciprocate within the enclosure having a bolt portion formed thereon, the bolt portion extending through the bolt plate member to the exterior of the device, and means connecting the locking unit and the bolt member arranged to effect reciprocation of the bolt member as the locking unit is locked and unlocked.

5. The combination with a body member having substantially parallel exposed surfaces and an orifice formed therebetween substantially at right angles to the surfaces, of a locking device supported by the member correlatively to the orifice which comprises, a locking plate member arranged to be secured to one surface correlatively to the orifice, a bolt plate member arranged to be secured to the other surface, a tubular portion formed thereon positioned in the orifice arranged to engage the locking plate member whereby a substantially sealed enclosure is formed therebetween, a key locked unit supported by the locking plate member communicating with the enclosure, a bolt member arranged to reciprocate within the enclosure having a bolt portion extending through the bolt member to the exterior of the device, and means operatively connecting the locking unit and the bolt member arranged to effect reciprocation of the bolt member as the locking unit is locked and unlocked with a key.

6. A locking device comprising a key operated cylinder locking unit supported thereby having a normally locked cylinder member arranged to receive a key for the unlocking thereof, a bolt member reciprocally supported by the device having locked and unlocked positions normally positioned in the locked position, the movement of the member being in a plane substantially parallel to the axis of the cylinder member, and operating means operatively connecting the cylinder member and the bolt member for effecting reciprocation of the bolt member from one position to the other arranged to move the bolt member from the locked position to the unlocked position upon a rotation of the cylinder member less than a complete revolution thereof whereby the key inserted into the cylinder member cannot be removed therefrom while the bolt member remains in the unlocked position.

7. The combination with upper and lower windows relatively slidable in a window frame, of a key operated locking device extending through a side member of the lower window sash spacedly from the top sash member thereof, a bolt mem-

ber reciprocally supported thereby having a bolt portion normally extending rearwardly of the side member arranged to intercept the upper window upon the opening of either window a predetermined distance, a key operated unit supported by the device having a key operated member arranged to receive a key forwardly of the side member, the operation of the key operated member being arranged to reciprocate the bolt member from one position to the other, and a buffer device supported by the upper window having a resilient member arranged to resiliently engage the bolt portion upon the opening of either of the windows the predetermined distance.

8. The combination with upper and lower windows supported relatively slidably in a window frame, of a key operated locking device extending through a side member of the lower window sash spacedly from the top sash member thereof, a flanged portion formed on the device having a flange secured to the front face of the side member and another flange portion formed on the device having a flange secured to the rear face of the member, a bolt member movable in and out of the device through the rear flange portion arranged to limit the opening of the windows when extended and permit free movement thereof when retracted, and a key operated unit supported by the front flange portion arranged to effect movement of the bolt member from one position to the other.

9. A locking device comprising, a key operated cylinder lock unit having a normally locked cylinder member arranged to receive a key for the operation thereof, the axis of the cylinder member being parallel to but spaced from the axis of the lock unit, a housing for supporting the lock unit, a bolt member reciprocally supported thereby, the axis thereof being substantially coaxial with the axis of the lock unit, a threaded passageway formed therein having the axis thereof positioned substantially coaxially with the axis of the cylinder member, and a threaded member rotated by the cylinder member arranged to enter the passageway of the bolt member for effecting reciprocation thereof upon rotation of the cylinder member.

10. A locking device comprising, a key operated lock unit having a normally locked cylinder member therein, a housing arranged to support the unit at one end thereof, the unit extending into the housing whereby an annular space is formed therebetween, a bolt member arranged to reciprocate in the housing having a guiding portion and a bolt portion, the guiding portion being arranged to operate in the annular space, and means connecting the cylinder member and the bolt member for effecting reciprocation of the bolt member upon rotation of the cylinder member.

11. A locking device comprising, a forward housing member supporting a key operated lock unit having a rotating key operated member, a rear housing member supporting a movable bolt member, telescoping portions formed on the housing members arranged to maintain axial alignment thereof but permit relative axial movement of the members, and a connecting member connecting the key operated member and the bolt member arranged to effect operation of the bolt member upon rotation of the key operated member.

12. A locking device comprising, a housing ar-

5 ranged to support a key operated lock unit at one end thereof, the unit having a normally locked rotatable key operated member, a bolt member having a guiding portion slidable in the housing, a bolt portion formed on the bolt member arranged to extend through the other end of the housing, the bolt portion having a threaded passageway therein, and a threaded connecting member having one end thereof entering the threaded passageway and the other end thereof engaging the key operated member arranged to effect sliding movement of the bolt member upon rotation of the key operated member, the guiding portion of the bolt member spacedly surrounding the connecting member.

10 13. A locking device comprising, a housing arranged to support a key operated lock unit at one end thereof, the unit having a normally locked key operated member, a movable bolt member having a bolt portion slidable in the housing, a bolt portion formed on the bolt member arranged to extend through the other end of the housing, and a connecting member operatively connecting the key operated member and

the bolt portion arranged to effect sliding movement of the bolt member upon key operation of the key operated member, the guiding portion of the bolt member spacedly surrounding the connecting member.

5 14. In a window lock arranged to be secured relatively to an opening in the side rail of a window sash, a bolt supporting member arranged to be clampably secured to the outer face of the side rail, the member having a mating portion entering the opening, a lock supporting member arranged to be clampably secured to the inner face of the side rail, the member also having a mating portion entering the opening and matingly engaging the mating portion of the bolt supporting member, means independent of the mating portions for clamping the supporting members to the inner and outer faces of the side rail, a bolt operatively supported by the bolt supporting member, a key operated lock supported by the lock supporting member, and means operatively connecting the moving element of the lock and the bolt.

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