Aug. 8, 1933. C. J. HOHMAN 1,920,983

COMBINATION SASH LOCK

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Fig. 1.

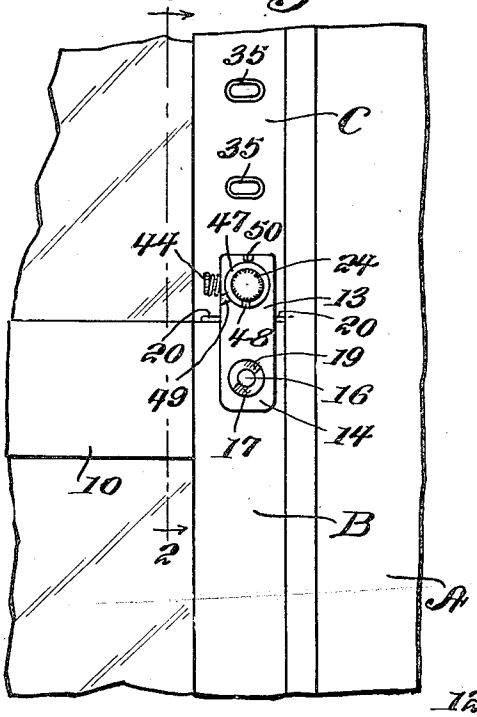


Fig. 2.

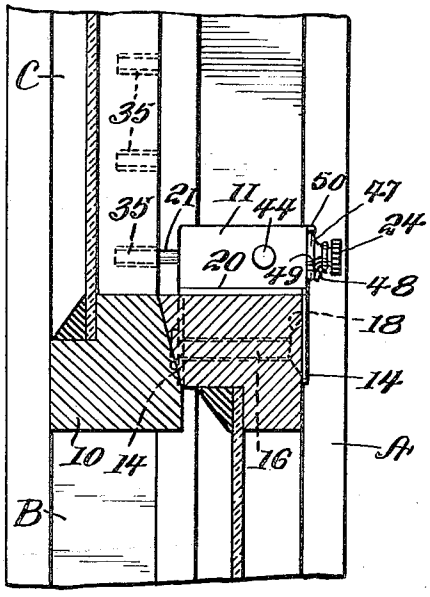


Fig. 3.

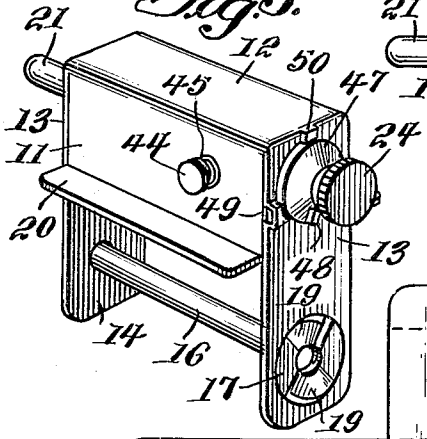


Fig. 4.

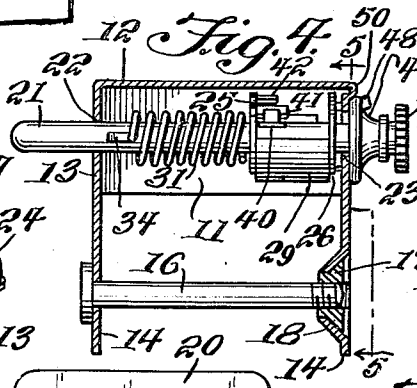


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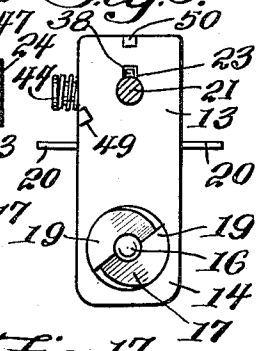


Fig. 17.



Fig. 6.

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Fig. 7.

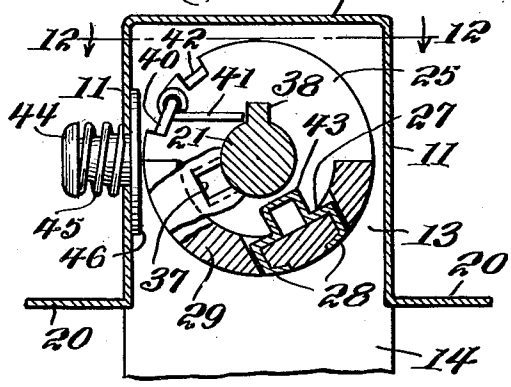


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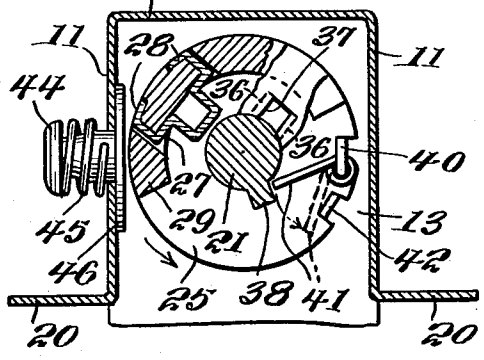


Fig. 9.

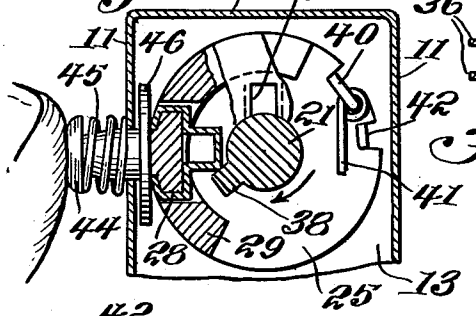


Fig. 15.

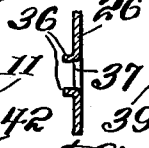


Fig. 10.

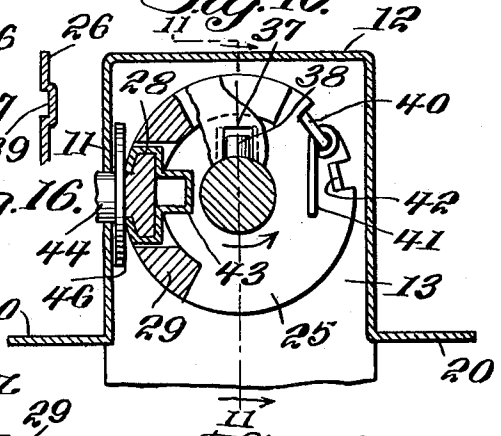


Fig. 16.



Fig. 13.

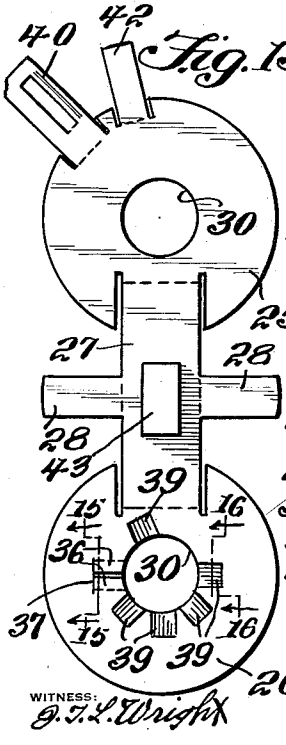


Fig. 14.

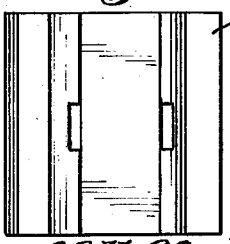
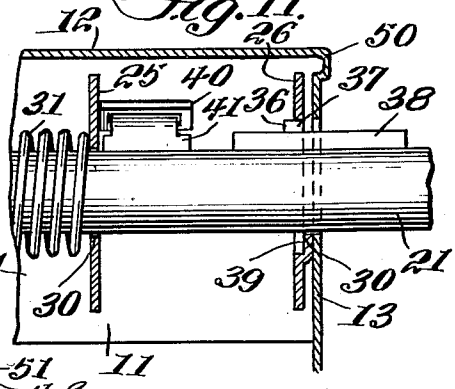


Fig. 11.



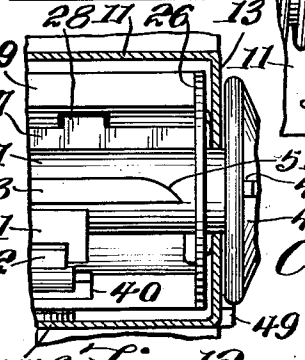


Fig. 12.

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UNITED STATES PATENT OFFICE

1,920,983

COMBINATION SASH LOCK

Charles J. Hohman, Miami, Fla.

Application July 18, 1932. Serial No. 623,220

4 Claims. (Cl. 70—18)

The invention relates to sash locks and more especially to combination sash locks.

The primary object of the invention is the provision of a lock of this character wherein the same when mounted upon a window sash will enable the latching of both upper and lower sashes of the window and the mounting of the lock is such that the removal thereof by an intruder will be avoided and also the manipulation of the lock to free the window sashes cannot be accomplished unless knowledge of its combination is had.

Another object of the invention is the provision of a lock of this character wherein the locking pin and its mounting are of novel form requiring a particular combination for the successful release of the pin when in locking position and in this manner the sashes of a window can be secured closed or in adjusted immovable relation to each other without liability of an intruder effecting the freeing of either sash for the opening of the window and also making it practically impossible for an unscrupulous person ascertaining the releasing position of the locking pin when in locked condition, thus in this fashion affording a safety device and a firm and secure lock for the sashes.

A further object of the invention is the provision of a lock of this character, wherein the construction thereof will permit the mounting of the same upon sliding window sashes and the same will assure the safe locking of the sashes to avoid intrusion from a window by an unauthorized or unscrupulous person.

A still further object of the invention is the provision of a lock of this character which is comparatively simple in construction, thoroughly reliable and efficient in its purposes and operation, strong, durable, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawings, which disclose the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a fragmentary elevation of a window frame with its sliding sashes showing the sash lock applied and constructed in accordance with the invention.

Figure 2 is a sectional view on the line 2—2 of Figure 1 looking in the direction of the arrows.

Figure 3 is a perspective view of the lock removed from the sash.

Figure 4 is a vertical sectional view therethrough.

Figure 5 is a sectional view on the line 5—5 of Figure 4 looking in the direction of the arrows.

Figure 6 is a plan view of the blank from which the casing of the lock is made.

Figure 7 is an enlarged vertical transverse sectional view through the lock showing the normal position of its parts when in locking condition.

Figure 8 is a view similar to Figure 7 showing a progressed position of its parts in the unlocking operation thereof.

Figure 9 is a view similar to Figure 8 showing a further progressed position of its parts and the combination cylinder held for the turning of the locking pin to releasing position.

Figure 10 is a view similar to Figure 9 with the locking pin turned to releasing position.

Figure 11 is a fragmentary vertical longitudinal sectional view through the lock with the locking pin moved to partial releasing position.

Figure 12 is a sectional view on the line 12—12 of Figure 7 looking in the direction of the arrows.

Figure 13 is a plan view of the blank from which the combination cylinder is made.

Figure 14 is a plan view of the cylinder showing the weight fastened thereto.

Figure 15 is a fragmentary sectional view on the line 15—15 of Figure 13 looking in the direction of the arrows.

Figure 16 is sectional view on the line 16—16 of Figure 13 looking in the direction of the arrows.

Figure 17 is a fragmentary elevation partly in section of the locking pin and adjuncts showing in detail the fastening and mounting of the spring therewith.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, A designates a portion of a window frame, B the lower sash slidably fitted therein and C the upper sash which is likewise slidably fitted in the frame, these sashes being of conventional form and in normally closed position with the meeting rails 10 abutting each other. Upon the lower sash B at the meeting rail 10 thereof in alignment with one vertical side rail is arranged the lock

constituting the present invention and hereinafter fully described.

The lock comprises a casing formed from a single blank of sheet material, preferably metal, cut and bent to provide sides 11, top 12 and ends 13, the ends 13 being extended beyond the sides 11 to provide attaching ears 14 to the casing, these ears having suitable openings 15 for accommodating a securing bolt 16 and a nut 17 for threaded engagement with the bolt. The ear 14 at the nut attaching end of the bolt 16 is countersunk to provide a seat 18 for the nut 17, the outer side of the nut being formed with a cammed screw driver engaging face 19 so that in the use of a screw driver the said nut will be turned in one direction, that is, in a direction to work inwardly onto the bolt 16 but on the attempt to reversely turn the nut the screw driver will ride off of the face 19 due to the cam formation thereof. The casing is adapted to straddle transversely the meeting or top rail 10 of the lower sash B with the ears 14 against the inner and outer faces of the vertical side rail of said sash and the bolt is engaged in these ears and also passed through the sash with the nut threaded upon the bolt and in this fashion the casing of the lock is made secure to the lower sash B as is clearly shown in Figures 1 and 2 of the drawings. The sides 11 of the casing are formed with outturned ledges or flanges 20 which rest upon the top of the lower sash B when the lock is applied thereto.

Mounted lengthwise of the casing is a slidable and rotatable locking pin 21, the same playing through a circular hole 22 in one end 13 of the casing and also through a keyhole-shaped opening 23 in the opposite end of said casing. The locking pin 21 carries a knurled knob or head 24 which is accessible at the inner side of the window frame A for the manual manipulation of the pin 21.

Loosely supported upon the pin 21 within the casing of the lock is a combination cylinder which is cut and bent from a single blank of sheet material such as metal to provide spaced circular or disk-like ends 25 and 26 respectively, these joined with each other through a strip-like web 27 which is disposed longitudinally of the cylinder and inset from the peripheries of the ends or disks 25 and 26 thereof. The web 27 intermediate of its length has at opposite edges thereof bendable tongues 28, these securing against the web a weight 29 which has its outer portion shaped and lying flush with the peripheries of the ends or disks 25 and 26. This weight 29 is adapted to gravitate the cylinder to a determined position with relation to the pin 21. The pin is centrally inserted through the cylinder by being loosely passed through suitable openings 30 for said pin.

The locking pin 21 has surrounding the same a coiled expansion spring 31 which has the end 32 thereof engaged in a suitable notch in the pin and held in the same by a retaining rivet 33, the latter having a bill 34 constituting an abutment for the outermost coil of the spring 31 and a part of the end 32 so that the strain imposed upon this spring will be relieved from the end 32 and taken by the rivet or bill 34 of the same. The spring 31 has a determined expanding action or extent and the free end of which is next to the end 25 of the cylinder loose upon the locking pin 21 so that this cylinder at its end 26 will be held close to the end 13 of the casing of the lock. The spring 31 is designed to tension the pin 21 when pulled upon and to urge the same into locking position. The vertical side rail of the upper sash C is formed with vertical spaced keeper sockets 35 for the selective engagement of the pin 21 therein to secure the sashes against movement relative to each other.

The end 26 of the combination cylinder has cut and bent therefrom lips 36 to form therebetween a clearance slot 37 for a key or bit 38 secured longitudinally in the pin 21 when the said slot 37 is in register with the keyhole-shaped opening 23 in the end 13 of the casing of the lock whereby the locking pin 21 can be pulled outwardly upon to an unlocking or releasing position. Related with the slot 37 on the inner face of the end 26 of the cylinder are spaced radially disposed recesses 39, these constituting false combination pockets for the key or bit 38 to misguide a person from gaining knowledge of the true combination for the working or releasing of the locking pin 21.

The disk 25 of the combination cylinder has cut and bent therefrom a hanger 40 for a pivoted gravity detent or dog 41 and also has cut and bent therefrom a stop 42 for limiting the outward gravity swing of the detent or dog 41. This detent or dog 41 functions with the key or bit 38 on the pin 21 so that when turning the pin 21 on gravitation of the detent or dog 41 to engaging position with the key or bit 38 the combination cylinder may be turned simultaneously with said pin for the setting of said cylinder under its combination control to permit the sliding of the pin to releasing position against the tension of the spring 31 active therewith and with the cylinder.

The web 27 has struck inwardly therefrom medially of the same an abutment 43 which coacts with the key or bit 38 when the pin 21 is turned to move the combination cylinder to bring the slot 37 in registration with the keyhole slot 38 for permitting the release of the locking pin 21 which is normally in locking engagement with a selected socket 35 in the upper sash C to secure the latter and the lower sash B against relative movement.

In one side 11 of the casing is mounted a push button 44 which is spring tensioned by a spring 45 and carries inwardly of the lock casing a holding head 46 which is adapted to be brought into contact with the cylinder so as to hold the same against movement under the influence of the gravity weight 29 and thus in this fashion permit of the setting of said cylinder under the lock combination for the release of the lock.

The knob 24 of the pin 21 has a dial 47 provided with an indicator lug 48, the latter being cooperative with setting marks or lugs 49 and 50 respectively on the end 13 of the casing next to said dial 47 so that a person having knowledge of the combination for the release of the locking pin 21 can readily set the dial 47 and likewise the locking pin 21 under the registration of the lugs 48, 49 and 50 and with manipulation of the push button 45 arrive at the true and legitimate combination in the setting of the combination cylinder within the casing of the lock for the release of the locking pin 21.

The key or bit 38 at the end next to the slot 37 and false slots 39 has a beveled or rounded edge 51 which permits the ratchet action of said key or bit 38 when the pin 21 is turned in one direction and a latching action with the false slots 39 when the pin 21 is turned in a reverse direction.

In the working of the lock the knob 24 is manipulated in a clockwise direction when the lug 48 on the dial is aligned with the lug 50 until said

lug 48 aligns with the lug 49, thence the said knob 24 is reversely turned anti-clockwise but it is to be understood that when the lug 48 aligns with the lug 49 the operator presses the button 44 to hold the combination cylinder in its adjusted or turned position, until the lug 48 again aligns with the lug 50, whereupon the slot 37 will, under the movement of the cylinder, be brought into registration with the keyhole slot 23 and the key or bit 38 under the reverse turning or anti-clockwise movement of the pin 21 will be brought into alignment with the registering slots whereby the pin 21 can finally be pulled upon for releasing the engagement thereof with the selected socket 35 and thus releasing the sashes for adjustment thereof in the frame A of the window. When the pull is released upon the pin 21 the same under the action of the spring 31 will be moved to latching position with a selected socket 35 and thus the sashes become locked in the frame A of the window.

What is claimed is:

1. A combination sash lock comprising a casing adapted to be permanently secured to the meeting rail of a lower window sash, a locking pin slidably and rotatably fitted within the casing for locking engagement with an upper window sash, a combination cylinder loosely supported upon the pin within the casing, a bit on the pin and movable through the cylinder and casing when said cylinder is in a predetermined position, said cylinder having false acting slots for the bit, a weight carried by the cylinder and holding the same in a position counter to the determined position for the sliding of said bit, and means manually operable to hold the cylinder against the action of its weight when adjusting the bit to permit the retracting of the pin.

2. A combination sash lock comprising a casing adapted to be permanently secured to the meeting rail of a lower window sash, a locking pin slidably and rotatably fitted within the casing for locking engagement with an upper window sash, a combination cylinder loosely supported upon the pin within the casing, a bit on the pin and movable through the cylinder and casing when said cylinder is in a predetermined position, said cylinder having false acting slots for the bit, a weight carried by the cylinder and holding the same in a position counter to the determined position for the sliding of said bit, means manually operable to hold the cylinder against the action of its weight when adjusting the bit to permit the retracting of the pin, and a spring active with the cylinder and pin to urge the latter in locking position on retracting thereof.

3. A combination sash lock comprising a casing adapted to be permanently secured to the meeting rail of a lower window sash, a locking pin slidably and rotatably fitted within the casing for locking engagement with an upper window sash, a combination cylinder loosely supported upon the pin within the casing, a bit on the pin and movable through the cylinder and casing when said cylinder is in a predetermined position, said cylinder having false acting slots for the bit, a weight carried by the cylinder and holding the same in a position counter to the determined position for the sliding of said bit, means manually operable to hold the cylinder against the action of its weight when adjusting the bit to permit the retracting of the pin, a spring active with the cylinder and pin to urge the latter in locking position on retracting thereof, and a gravity detent carried by the cylinder and engageable by the bit for imparting movement to the cylinder counterclockwise when free of the manually operated means for the setting of said cylinder to permit retracting of the pin.

4. A combination sash lock comprising a casing adapted to be permanently secured to the meeting rail of a lower window sash, a locking pin slidably and rotatably fitted within the casing for locking engagement with an upper window sash, a combination cylinder loosely supported upon the pin within the casing, a bit on the pin and movable through the cylinder and casing when said cylinder is in a predetermined position, said cylinder having false acting slots for the bit, a weight carried by the cylinder and holding the same in a position counter to the determined position for the sliding of said bit, means manually operable to hold the cylinder against the action of its weight when adjusting the bit to permit the retracting of the pin, a spring active with the cylinder and pin to urge the latter in locking position on retracting thereof, a gravity detent carried by the cylinder and engageable by the bit for imparting movement to the cylinder counterclockwise when free of the manually operated means for the setting of said cylinder to permit retracting of the pin, and a setting knob on the outer end of the pin and having combination indicia thereon.

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