

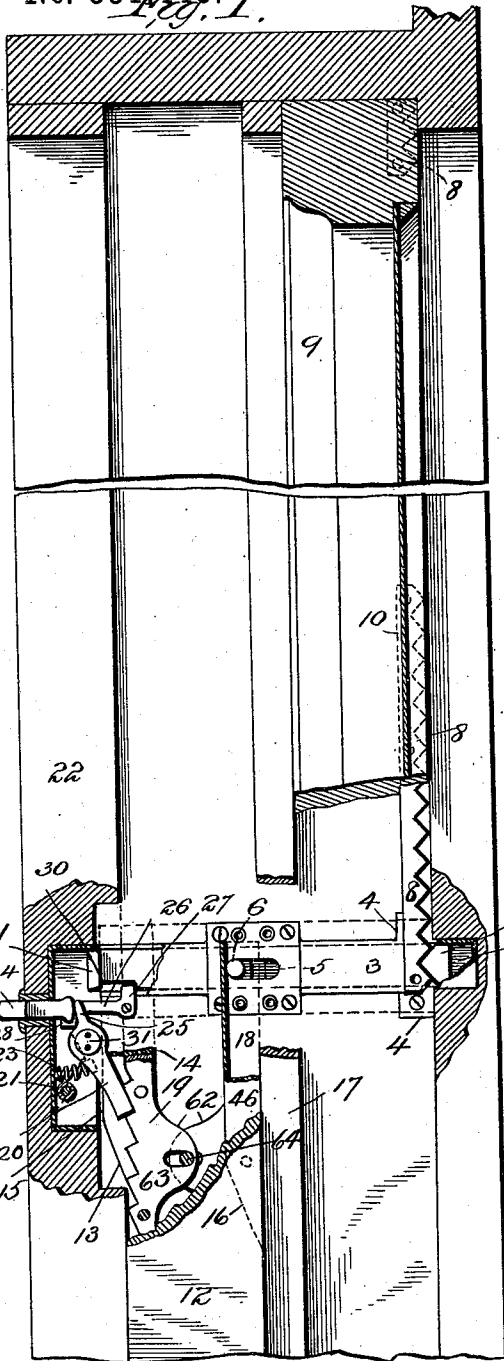
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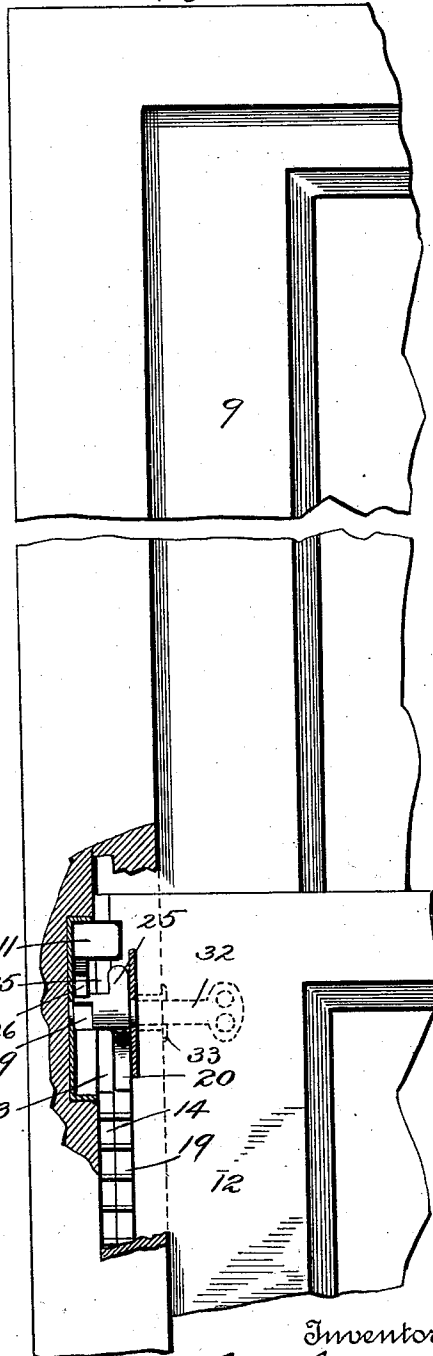
L. C. MILLER.  
SASH FASTENER.

No. 531,443.

Patented Dec. 25, 1894.



Witnesses.  
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Inventor  
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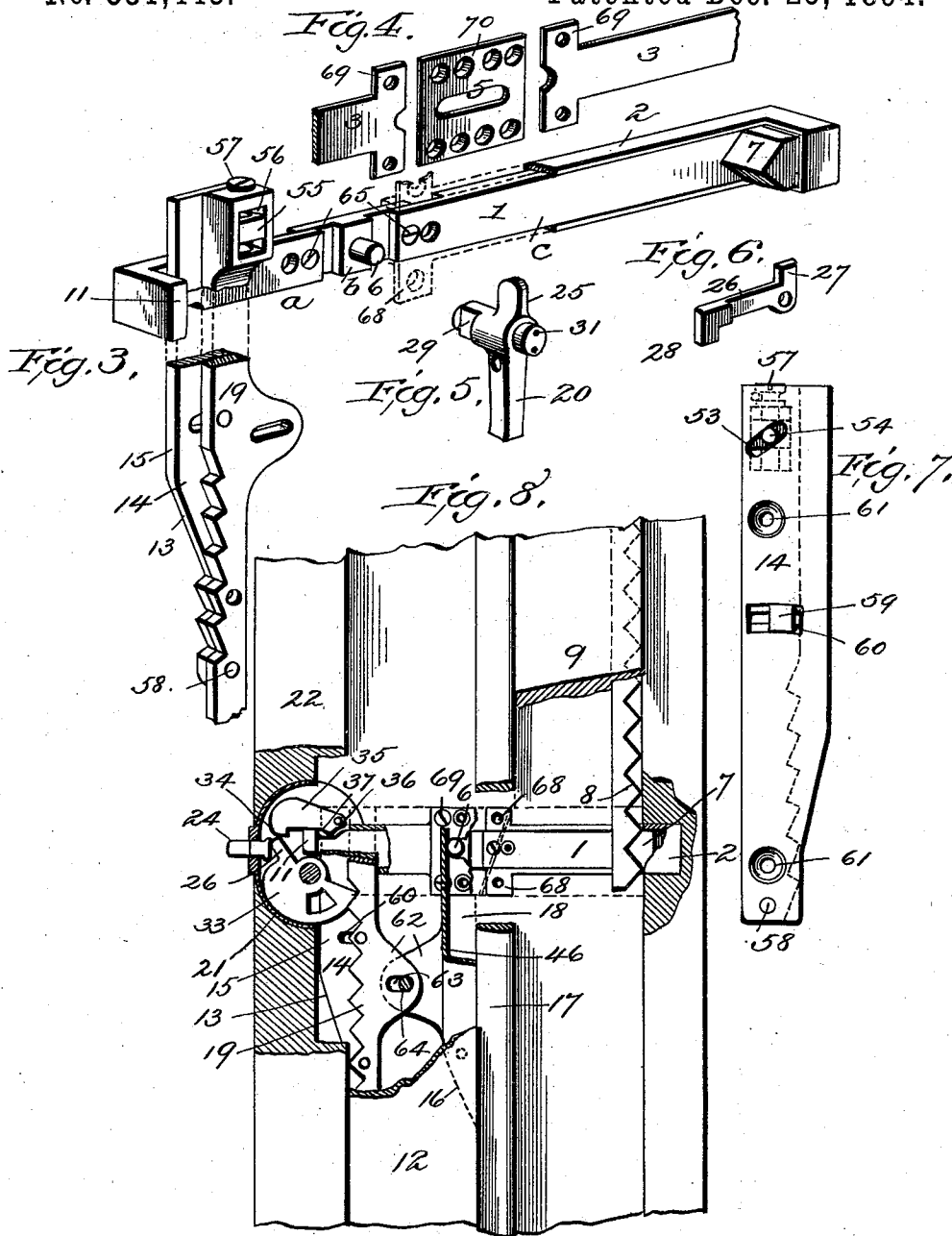
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3 Sheets—Sheet 2.

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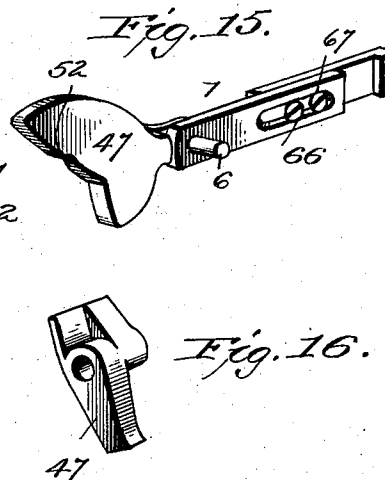
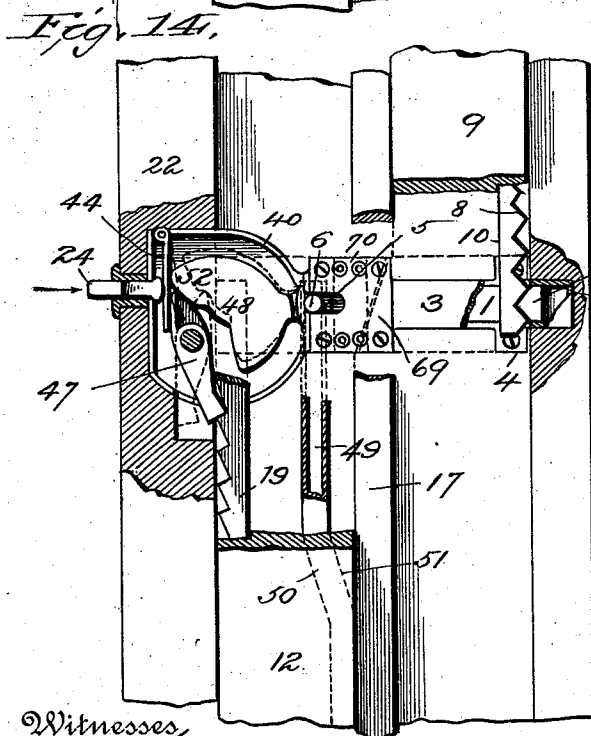
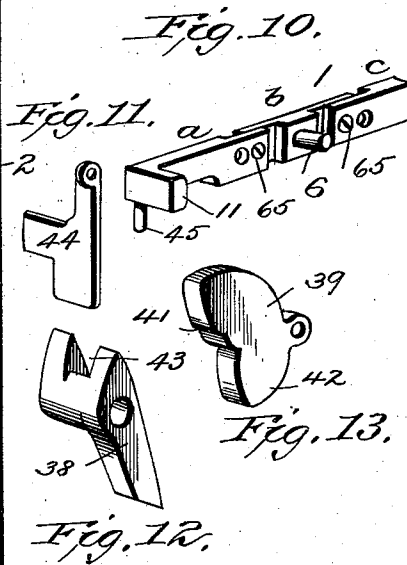
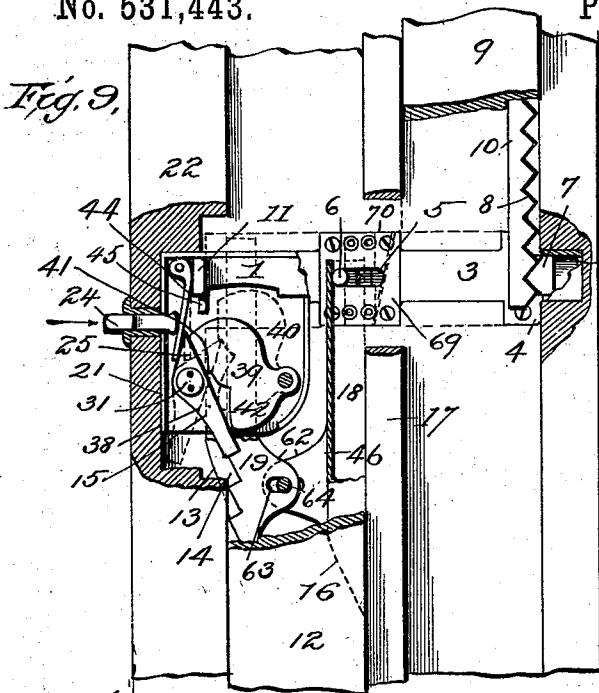
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3 Sheets—Sheet 3.

L. C. MILLER.  
SASH FASTENER.

No. 531,443.

Patented Dec. 25, 1894.



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# UNITED STATES PATENT OFFICE.

LEWIS CASS MILLER, OF ST. LOUIS, MISSOURI.

## SASH-FASTENER.

SPECIFICATION forming part of Letters Patent No. 531,443, dated December 25, 1894.

Application filed September 29, 1894. Serial No. 524,482. (No model.)

*To all whom it may concern.*

Be it known that I, LEWIS CASS MILLER, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Sash-Fasteners; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to sash fasteners or locks. It is an improvement on the fastener or lock for which United States Letters Patent were granted to me August 21, 1894, No. 524,905, and has for its object to provide improved simple and efficient means for automatically locking both the top and the bottom sashes in different positions of adjustment of the two sashes so that the top sash can be lowered and the bottom sash raised to allow ventilation at the top and bottom of the window, the two sashes being as stated automatically locked in their adjustment so that neither can be moved until one sash is released by means provided therefor and which cannot be reached from outside the window, the same locking means serving also to lock the two sashes in their closed positions, said locking means being set into action by the movement of one of the sashes.

To the accomplishment of the foregoing object and such other objects as may hereinafter appear the invention consists in the construction and also in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims reference being had to the accompanying drawings forming a part hereof, and in which—

Figure 1 is a side elevation through a portion of a window showing the top and bottom sashes with parts in section to illustrate the lock applied; Fig. 2, a front elevation of a portion of a window with parts broken away showing portions of the lock in section; Fig. 3, a detail perspective of the locking bolt; Fig. 4, a detail perspective of the face plate or cover to the locking bolt shell. Fig. 5 is a

detail perspective of the locking pawl shown in Fig. 1; Fig. 6, a perspective of the dog shown in Fig. 1; Fig. 7, a side view of a portion of the ratchet bar and locking cam; Fig. 8, a view similar to Fig. 1 showing a modification; Fig. 9, a view similar to Fig. 8 showing another modification; Fig. 10, a perspective of the locking bolt shown in Fig. 9; Fig. 11, a detail view of the swinging plate or wing shown in Fig. 9; Fig. 12, a detail of the pawl shown in Fig. 9; Fig. 13, a detail of modified form of gravity dog, shown in Fig. 9; Fig. 14, a view similar to Fig. 9 of another modification; Fig. 15, a detail perspective of locking bolt and modified gravity dog, shown in Fig. 14; Fig. 16, a detail perspective of modified form of pawl, shown in Fig. 14.

In the drawings the numeral 1 designates the locking bolt which is inclosed in a casing or shell 2 which is set into the window frame transversely across the meeting rails of the bottom and top sashes, said case or shell 2 preferably being provided with a removable face 3 having ears 4 for the passage of screws to secure the face plate in position and hold the bolt and its shell in the window frame, the face plate 3 also being formed with an elongated slot 5 for the passage of a pin 6 which projects from the face of the locking bolt. The locking bolt is also formed with a tooth 7 adapted to engage with any one of a series of serrations 8 which extend along the rear edge of one of the stiles of the upper sash 9, said serrations preferably being made in one or more metallic strips or plates 10 secured at appropriate points along the stile of the upper sash. The other end of the bolt is formed with a shoulder or projection 11 against which will act a cam hereinafter described for moving the bolt into its locking position. Into the forward end of one of the stiles to the lower sash 12 is set what I will designate as a cam 13, the said cam being preferably an inclined face to a plate 14 set into the stile of the sash, said plate having a straight edge of any desired length above said cam face, the straight edge being designated by the numeral 15.

The cam 13 is designed to bear against the shoulder or projection 11 on the bolt 1 when the bottom sash is pulled down so as to move

the bolt to the left and cause the tooth 7 to enter one of the serrations 8 of the top sash thus locking the top sash. The straight portion 15 of the cam plate 14 bears against the projection or shoulder 11 and serves to hold the bolt in its locked position. This straight edge also allows the lower sash to be raised more or less without unlocking the top sash, the extent of movement to effect that end being limited or dependent upon the length of the straight portion of the plate 14.

The rear portion of the stile of the bottom sash which carries the cam 13 is provided with a cam 16 which is preferably formed by cutting out the rear of the stile along the parting bead 17, the lower portion of said cut out portion being inclined to form the cam 16. It is preferred to line this cut out portion with a metal facing or shell 46 corresponding to the shape of the cut out portion. The cut out portion forms a groove 18 into which will project the pin 6 of the locking bolt 1. The pin 6 moves into this groove from the rear when the bolt is moved into its locking position and moves out of the groove when the cam 16 bears against it so as to shift the bolt into its unlocking position. It will thus be observed that the cam 13 moves the bolt into locking position when the lower sash is pushed down and that the cam 16 moves it into its unlocking position when the bottom sash is pushed up. It will also be observed that the straight portion of the groove 18 above the cam 16 and the straight edge of the plate 14 above the cam 13 allow of a certain movement of the bottom sash up and down without unlocking the top sash, and that the two cams 13 and 16 bear such relation to each other that in raising the bottom sash the cam or incline 13 comes into position opposite the shoulder or projection 11 on the bolt in time to release the bolt so that the cam 16 may act on the pin 6 to move the bolt into its unlocking position, and that in lowering the sash the cam or incline 16 comes opposite the pin 6 in time to free the bolt so that the cam 13 can act upon the shoulder or projection 11 to throw the bolt into its locking position.

It is obvious from the foregoing that when the bottom sash is lifted far enough to unlock the top sash, the latter sash can be lowered to the extent desired and the bottom sash then brought down so as to throw the bolt and lock the top sash to its adjustment. It has also been stated that the straight portion of the groove 18 above the cam 16 and the straight portion of the plate 14 above the cam face 13 will allow a certain upward movement of the bottom sash without unlocking the top sash. This allows the bottom sash to be raised so as to give ventilation at the bottom of the window. In order to lock the bottom sash in its adjustment and also in its lowered position, a ratchet bar designated by the numeral 19 is attached to a stile of the bottom sash and is preferably made a part of the plate 14 but may be made separate therefrom and attached

by screws or other means thereto. A pawl 20 attached to a stationary part of the window is provided to engage with this ratchet bar so as to lock the bottom sash in any of its positions. This pawl is preferably journaled in any well known way in the shell or casing 21 which is set into the window frame behind the bead 22. This pawl 20 will normally be in engagement with one of the teeth of the ratchet bar 19 so as to keep the bottom sash locked, and it may be held in such engagement in various ways, for instance, it may have its left end so disposed that it will by gravity engage with the ratchet bar, or it may be pressed into engagement by means of a spring or other means. These are equivalent forms and are illustrated in the drawings, a gravity pawl being shown in Fig. 6 and other figures and a spring actuated pawl in Fig. 1. The spring for holding the pawl in engagement with the ratchet bar is designated by the numeral 23 in Fig. 1. When the bottom sash is to be raised the pawl 20 is thrown out of engagement with the ratchet bar 19. This can be effected in different ways. One way is by means of a push button 24 passed through the window frame and adapted to bear against the heel portion 25 of the pawl so as to press the top of the pawl inwardly and the bottom outwardly and thus disengage the pawl from the ratchet. For the purpose of holding the pawl out of engagement with the ratchet while the sash is being raised, I may employ a dog of appropriate form to engage with a portion of the pawl when thrown out of engagement with the ratchet and holding it in that position until thrown into position again to engage the ratchet. One form of such a pawl is designated by the numeral 26 in Fig. 1, the same being pivoted to the window frame and formed with a heel 27 and a nose 28. The nose is adapted to ride upon the hub of the pawl 20 and when the pawl is turned out of engagement with the ratchet, the nose of the dog will drop down upon the square portion 29 of the hub of the pawl and thus hold the pawl out of engagement with the ratchet. The heel 27 of the dog lies in the path of travel of the bolt 1 so that when the bolt is moved into its unlocking position by the means hereinbefore described, a shoulder or projection 30 on the bolt will strike the heel of the dog and raise the dog from the square portion of the hub of the pawl whereupon the pawl will be thrown by the spring 23 into position to engage the ratchet bar 19. The movement of the bolt so as to lift the dog from the pawl will be so timed that the bottom sash will be raised high enough to carry the ratchet bar 19 above the pawl before the pawl will be released from the grasp of the dog. This will permit the bottom sash to be raised to any height desired. As soon as the pawl is released from the dog it assumes its normal position and then as the bottom sash is lowered the ratchet teeth will slip past the end of the

pawl and the latter will at the same time engage with the teeth of the ratchet so that the bottom sash cannot be lifted until the pawl is thrown out of engagement with the teeth.

5 It will thus be seen that the bottom sash can be locked in any position of its adjustment and will be automatically locked as it is lowered. This construction taken in connection with the locking means described for the top

10 sash, enables both the top and the bottom sash to be locked in various adjustments so that they can be opened at top and bottom for ventilation and locked in such positions so that no one can enter from the outside of the window.

15 If desired the push button 24 may be omitted, and in place thereof I may employ a key of any appropriate form for instance, a flat key having two points adapted to engage corresponding cavities 31 in the hub of the pawl by passing the key through an ordinary escutcheon. Such a key is illustrated in Fig. 2 of the drawings and is there designated by the numeral 32 while the numeral 33 designates the escutcheon, said key being

25 of the flat order. By omitting the push button and employing a key to release the pawl from the ratchet bar, the lock is particularly well adapted for use in reformatories, insane asylums, and other places where it is desirable to place the control of the windows under a trusted official.

In Fig. 8 of the drawings I have shown a different form of pawl to engage the ratchet bar 19, and a different form of dog to engage the pawl to hold it out of engagement with the ratchet bar. In this modified form the pawl is designated by the numeral 33 and is illustrated as in the form of a segment having its heft so disposed that the pawl will swing by

40 gravity into engagement with the ratchet bar. This pawl has also a heel 26 against which the push button 24 will act so as to swing the pawl out of engagement with the ratchet bar 19 and into a position where the nose 34 of the dog 35 will engage the heel 26 and hold the pawl out of engagement with the ratchet bar. The dog 35 is provided on its under face with a projection or heel 36 against which bears a projection or shoulder

50 37 on the locking bolt 1 so that when the bolt is thrown into its unlocking position, the dog 35 will be lifted and the pawl 33 released so as to swing into engagement with the ratchet bar 19. The parts of the lock illustrated in this figure of the drawings and their mode of operation are the same as described in reference to Fig. 1 except in the modified construction of the pawl and the dog, the operation of which parts however is substantially the same as the corresponding parts in Fig. 1 of the drawings.

The pawl in Fig. 8 of the drawings may be operated by a key instead of by a push button the same as described in reference to Fig. 1 of the drawings.

65 If desired the dog for holding the pawl out of engagement with the locking bar may be

omitted entirely but in that event it will be necessary to continue the pressure on the pawl through the push button 24 until the bottom sash has been raised to the height desired or to a point beyond the engaging point of the pawl. While this change is not regarded as presenting the invention in its most complete form still such omissions can be made and the essential features of the invention be still employed. This change is well adapted to window sashes that are narrow and have only a single lift but the other form is recommended where the sash is larger and two lifts are employed.

In Fig. 9 of the drawings I show another form of the invention in which gravitating means are employed for throwing the pawl into engagement with the ratchet bar of the bottom sash. In this figure the numeral 38 designates the pawl journaled in the shell or casing 21 and which is weighted by a gravitating weight 39 so as to throw the toe of the pawl into engagement with the teeth of the ratchet bar 19. This gravitating weight 39 is pivoted in a shell or case 40 set into the stile of the bottom sash and is formed with a nose 41 and heel 42. The nose of the weight 39 bears against the heel of the pawl and holds the toe of the latter in engagement with the ratchet bar 19 when the bottom sash is locked. The pawl 38 is formed with a groove 43 so that the cam plate 14 having the straight edge 15 and incline 13, may work therein without interference in the up and down movement of the sash. When it is desired to throw the pawl out of engagement with the ratchet bar, the push button 24 is pressed inward against a pivoted or swinging plate 44 which bears against the heel of the pawl so that the heel is pressed inwardly and the toe outwardly from the ratchet bar to release the bottom sash. This movement throws backward the gravitating dog 39 and brings the top of the pawl under the nose 41 of the dog which will hold the pawl out from the rack bar. At the same time the nose 41 is brought in front of and just above the point of a pin 45 depending from the bolt 1 so that when the incline or cam 16 of the bottom sash presses against the pin 6 to throw the bolt 1 into its locking position, the pin 45 will bear against the nose of the weight 39 and move the latter backward and hold it against dropping down upon the pawl and thus free the pawl so that it may drop to its normal position and lock the bottom sash when lowered. When the bottom sash is lowered and the incline or cam 13 presses the bolt 1 into its locking position, the pin 45 is carried away from the weight 39 and the latter then falls by gravity against the pawl 38 and weights the latter so as to guard against accidental disengagement of the pawl from the rack bar and thus securely locking the bottom sash and with it the top sash.

Instead of using the push button 24, a key may be employed for throwing the pawl 38

out of locking engagement with the ratchet bar 19, the same as described in reference to Fig. 1 of the drawings.

In Fig. 14 of the drawings is illustrated  
 5 another form of the invention in which is employed a pawl actuated by gravitating means for throwing it into engagement with the ratchet bar 19. In this form of the invention the pawl is designated by the numeral 47 and  
 10 against which bears a gravitating dog 48 which is hinged or pivoted to the adjacent end of the locking bolt 1. In this modification, I dispense with the forward cam plate 14 and change the form of the shell having  
 15 the cam face in the rear of the sash stile to the form shown in Fig. 14 wherein I show the two cam faces which actuate the bolt in both directions brought close together. This I effect by forming a shell 49 with two opposite  
 20 cam faces 50 and 51 located at such point between the upper and lower portions of the shell that the bottom sash can have a limited up and down movement before the cams will actuate the locking bolt so that the bottom  
 25 sash, as well as the top sash, can be locked in various adjustments in manner similar to that described with reference to Fig. 1 of the drawings. The shell 49 will be set into the  
 30 rear edge of one of the stiles to the bottom sash, and when the bottom sash is lifted after disengagement of the pawl 47 with the ratchet bar 19, the cam 50 will come in contact with the pin 6 of the bolt 1 and throw the bolt to one side so as to unlock the top sash. This  
 35 movement also carries backward the gravity dog 48 away from the pawl 47 so that the latter will swing into position to engage the ratchet bar 19 and lock the bottom sash in position on being lowered. In the operation  
 40 of lowering the bottom sash the incline or cam face 51 will come in contact with one face of the pin 6 and press the same forward so as to throw the bolt 1 into locking engagement with the top sash, the bottom sash being at the  
 45 same time locked by the pawl 47 engaging the ratchet bar 19. To unlock the bottom sash the push button 24 is pressed in against the pivoted or swinging plate or wing 44 so as to press against the heel of the pawl 47  
 50 and thus release the toe of the pawl from the ratchet bar. This movement also throws partially back the gravity dog 48 until its nose 52 catches over the top edge of the heel to the pawl and thus holds the pawl 47 away from  
 55 engagement with the ratchet bar 19. This allows the bottom sash to be lifted, and when the cam 50 comes in contact with the pin 6 and throws back the bolt 1 the bolt carries with it the gravity dog 48 so as to release the  
 60 pawl 47 and leave it in position to engage the ratchet bar 19. On throwing the bolt in the opposite direction the gravity dog bears against the heel of the pawl 47 and weights the pawl so as to insure the continued en-  
 65 gagement of its toe with the ratchet bar.

The operation just described for the gravity pawl 48 is also true of the form illustrated in

Fig. 9 of the drawings except that under the construction shown in Fig. 9 the weight of the gravity dog 39 is not permitted to press upon  
 70 the pawl until the bolt 1 is thrown back into its locking position with the result that the pawl will hang in practically a vertical position until thrown into position to engage the ratchet bar 19 by the weight of the dog thereon. 75

It will be observed that in each one of the forms of the invention illustrated, a pawl and ratchet or rack bar are employed for locking the bottom sash in position; also that a weighted or gravity dog is used for holding  
 80 the pawl out of engagement with the rack bar for a period of time, and that said weighted or gravity dog is caused to release its hold upon the pawl by the movement of the locking bolt; also that said gravity or weighted  
 85 dog bears upon a portion of the pawl when the latter is in engagement with the rack bar thus tending to hold the pawl against accidental disengagement from the rack bar. It is also to be observed that the locking bolt is  
 90 moved in both directions of its movement by means of separate cams acting positively upon the bolt in the up and down movement of the bottom sash and that said cams and other parts of the lock are entirely concealed from  
 95 view except the small push button for releasing the pawl from the rack bar, and that when said button is omitted and the key employed in its place, which can be done in any of the forms illustrated, all the parts are concealed  
 100 and beyond the control of any person except the person in possession of the key to disengage the pawl from the rack.

At times there is difference in the thickness of the sash stile and it therefore becomes desirable to provide a way for adjusting the  
 105 cam plate 14 so as to compensate for this difference. To that end I form an oblique slot 53 in the upper part of the plate 14 which slot receives a pin 54 that projects from a nut  
 110 55 which is worked up and down in a cavity or recess 56 formed in the top of the rack bar 19, the adjustment of the nut being affected by the screw 57. As the nut is drawn up in the slot by turning of the screw, the pin 54  
 115 presses against the walls of the oblique slot 53 so as to draw the cam plate inwardly, and by moving the nut in the opposite direction the cam plate is thrown in the other direction so as to compensate for the difference in  
 120 the thickness of the sash stile over the standard or ordinary size. This side adjustment of the cam plate is permitted by the pin 58 which pivots the cam plate to the rack bar 19. A guide pin 59 attached to the rack bar passes  
 125 through an elongated slot 60 formed in the cam plate 14, which elongated slot has beveled walls as shown in Fig. 7 so that the head of the guide pin may lie below or flush with the surface of the cam plate. Counter  
 130 sunk holes 61 will be formed in the cam plate 14 so that the screws which will secure the rack bar to the stile can pass freely through these countersunk holes and have their heads

lie in countersunk holes in the rack bar thus bringing the pins below the inner surface of the cam plate so as not to interfere with the swinging back and forth movement of the same. I do not however confine myself to these exact details just described but give the same merely as an illustration of one means by which to secure said parts together in operative relation. As the adjustment of the cam plate need be only the fractional part of an inch, and a small fractional part at that, there need be but a slight play allowed between the guide pin 59 and the walls of its slot to allow the proper adjustment of the cam plate.

Where the cam plate 14 is used on the front edge of the stile and the cam shell 46 is used on the rear edge it is preferred to connect the two parts together by means of ears 62 projecting from each of said parts toward the other and formed with a slot 63 so that one can be adjusted upon the other and the two held together by a binding screw 64, thus permitting the two parts to be adjusted so as to fit them in the first instance to the window stile. This feature of construction however can be omitted.

In order to adjust the locking bolt 1 so as to accommodate it to different thicknesses of window frames or sashes, I prefer to form the same in sections so that the sections can be adjusted one upon the other and thus regulate the length of the bolt. One construction for this purpose is illustrated clearly in detail in Figs. 3 and 9 of the drawings where the bolt is shown as made in three parts *a*, *b*, *c*, the meeting ends of the three parts lapping one upon the other and secured together by screws 65 which can be passed through any two of the series of openings shown so as to lengthen or shorten the bolt. In Fig. 15, I show the bolt made in only two sections, one section being formed with an elongated slot 66 through which will pass screws 67 into corresponding openings made in the other section of the bolt so that by loosening the screws one section can be adjusted upon the other and held to the adjustment by tightening the screws.

The case or shell which contains the locking bolt is also made in two parts, the adjacent ends of the two parts being formed with lateral ears 68, and the top plate or cover 3 therefor is made in three parts, the adjacent ends of two of the parts being formed with ears 69 so as to fit over the ears 68 of the shell. The middle portion of the cover consists of a separate plate 70 adapted to straddle the space between the adjacent ends of the shell and cover and to rest upon the adjacent ends of the cover 3, and is formed with a series of holes adapted to register with corresponding holes in the ears of the shell and the cover so that by passing screws or bolts through the holes when the several parts have been adjusted the parts will be held together. The elongated slot 5 for the play of the pin 6 is

formed in the central portion 70 of the cover or plate 2. While the construction of the bolt and shell and cap therefor just described is one form for accomplishing the objects in view still I do not restrict myself to such details as changes can be made therein without departing from the essentials of the invention.

It will be noticed that the parts of the lock are all concealed in the window frame or sashes out of view, and that both the top and the bottom sash are locked practically in an automatic manner by simply lowering the bottom sash, and that the bottom sash is locked in various positions during its downward movement by the engagement of the pawl with the rack bar on the sash and that when so locked the sash cannot be raised until the pawl is thrown out of engagement with the ratchet bar which can only be done by pressing the push button against the pawl or else by using a key to engage with and turn the pawl.

The lock affords practically absolute safety against the movement of either bottom or top sash from outside of the window, and also from the inside of the window when a key is employed instead of the push button to release the pawl except when the key is inserted by a person in whose keeping it is placed. This locking of the two sashes also allows either one or both to be opened at the top or bottom for the purposes of ventilation while at the same time affording security against unauthorized movement of either sash. These features render the lock particularly well adapted for use in insane asylums and reformatory institutions where it is desirable to place the sashes absolutely under the control of authorized persons, and at the same time affording proper ventilation through the window without the possibility of escape through the window by persons confined within the room.

I have shown and described with particularity the preferred construction of the several parts entering into the invention but I do not mean to limit myself thereto as it is obvious that changes can be made therein without departing from the essential features of the invention, some changes being illustrated in the various modifications shown and which are indicative of other changes that can be made without departing from the invention. Having described my invention and set forth its merits, what I claim is—

1. In a sash lock or fastener, the combination with mechanism for locking the top and the bottom sash in the operation of lowering the bottom sash, of means formed to have a detachable key engage therewith for releasing the bottom sash, substantially as and for the purposes described.

2. In a sash lock or fastener, the combination with a rack bar provided for each the top sash and bottom sash, a sliding bolt to lie transversely across the meeting rails of the two sashes and engage the locking bar of one

sash, a pawl to engage the rack bar of the other sash, said pawl and bolt being thrown into position with their respective rack bars by the operation of lowering the bottom sash so as to lock both top and bottom sashes, and independent cams one to engage a portion of the locking bolt to move it into locking engagement with its sash when the bottom sash is lowered and the other to engage with a portion of the bolt to move it into its unlocking position when raising the bottom sash, substantially as and for the purposes described.

3. In a sash lock or fastener, the combination with a rack bar for the top sash and a rack bar for the bottom sash, of a locking bolt to lie transversely across the meeting rails of the top and bottom sashes and engage the rack bar of the top sash, a pawl to engage the rack bar of the bottom sash, a cam for the front edge of the bottom sash having an actuating face so formed that during a partial movement of the cam it will actuate the locking bolt and during its further movement it will hold the bolt in its locking position, a second cam for the rear edge of the bottom sash having an actuating face so formed that during a partial movement of the cam it will act upon a portion of the bolt to throw the bolt into its unlocking position while during its further movement it will be non actuating, and means for releasing the pawl from the rack bar of the bottom sash when said sash is to be raised, substantially as and for the purposes described.

4. In a sash lock or fastener, the combination of a rack bar for the top sash, a rack bar for the bottom sash, a pawl to engage the rack bar of the bottom sash to lock said sash, means for releasing said pawl from its rack

bar, a dog to engage said pawl and hold it out of engagement with the rack bar for a period, and a locking bolt to engage the rack bar of the top sash to lock the same and actuating said dog to release the pawl when the bolt is thrown into its unlocking position whereby said pawl will resume its normal position to engage the rack bar of the bottom sash as the latter is lowered, substantially as and for the purposes described.

5. In a sash lock or fastener, the combination with a locking bolt placed transversely across the meeting rails of the top and the bottom sash and adapted to engage a part of the top sash to lock the sash, of a cam for the bottom sash having an actuating face so formed that during a partial movement of the cam it will actuate the locking bolt and during its further movement will hold the bolt in its locking position, and means for adjusting laterally said cam relatively to the portion of the bolt with which it engages, substantially as and for the purposes described.

6. In a sash lock or fastener, the combination with a rack bar for the top sash, of a locking bolt to lie transversely across the meeting rails of the top and bottom sash and engage the rack bar of the sash, said bolt being formed in sections adjustable one in relation to the other to lengthen or shorten the bolt, and means for actuating said bolt in the movement of the bottom sash, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS CASS MILLER.

Witnesses:

NATHAN H. ROBBINS,  
WM. G. HENDERSON.