No. 803,335. PATENTED OCT. 31, 1905.

I. F. FRISBEE.

SASH LOCK.

APPLICATION FILED MAY 6, 1905.

2 SHEETS—SHEET 1.

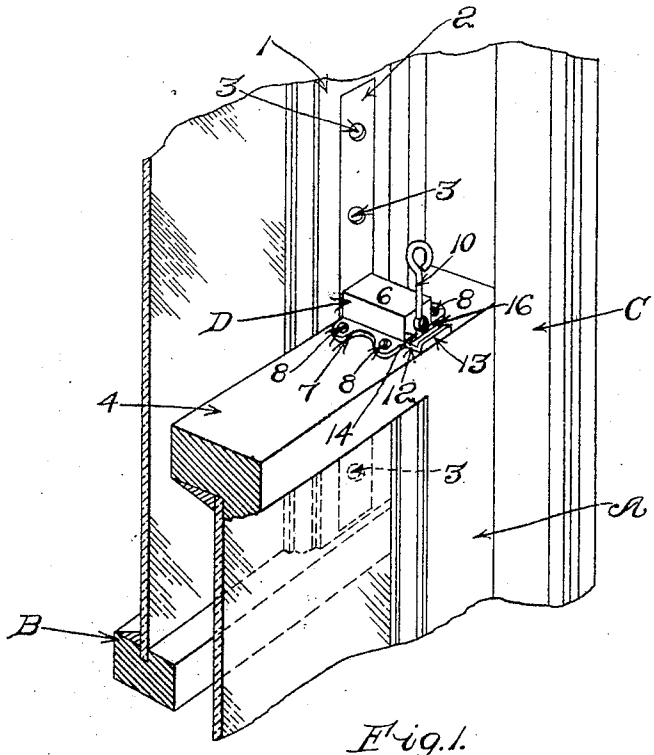


Fig. 1.

Fig. 2.

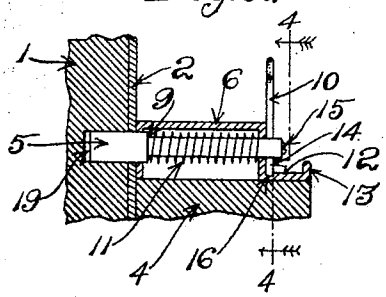


Fig. 3.

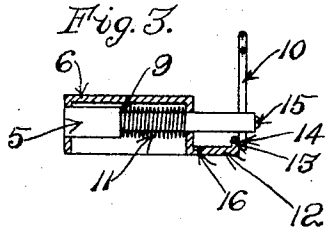


Fig. 4.

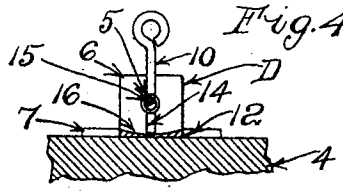
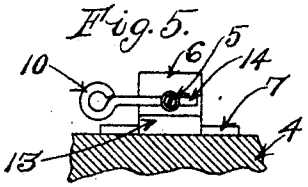


Fig. 5.



Witnesses:

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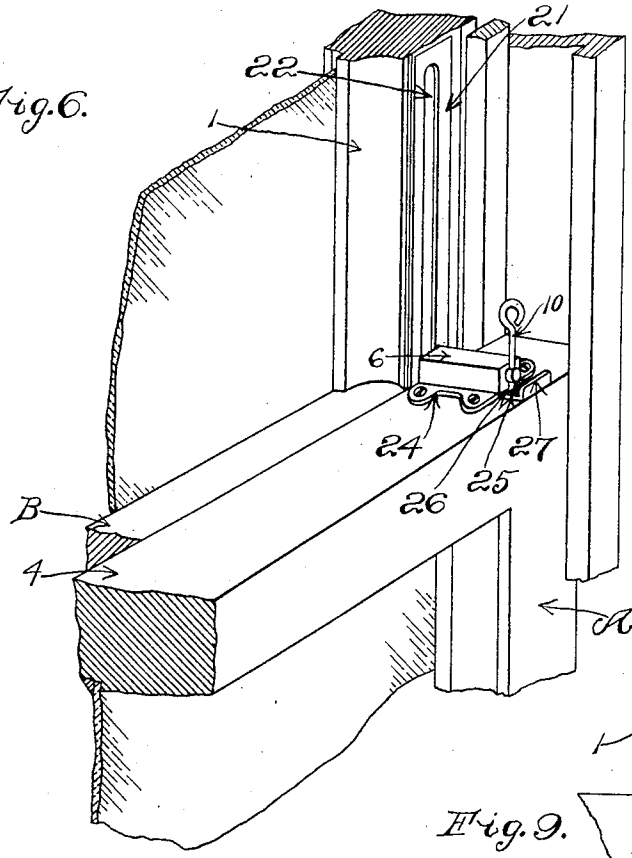
I. F. FRISBEE.

SASH LOCK.

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2 SHEETS—SHEET 2.

Fig. 6.



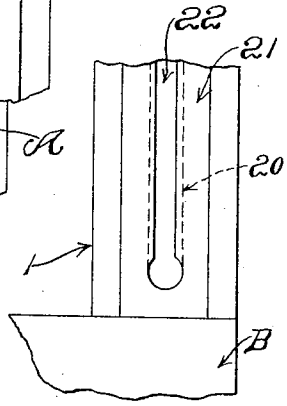


Fig. 9.

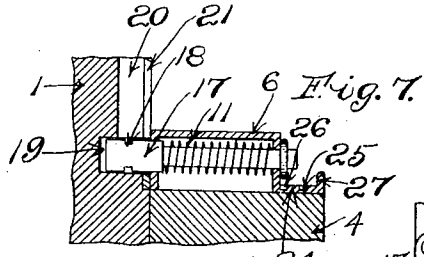


Fig. 7.

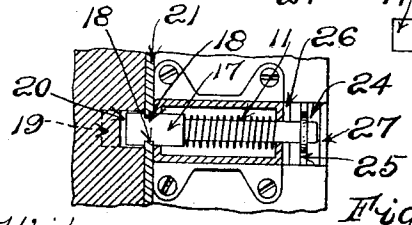


Fig. 8.

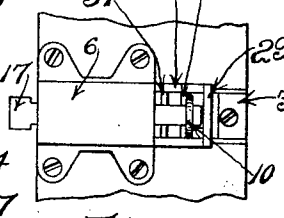


Fig. 10.

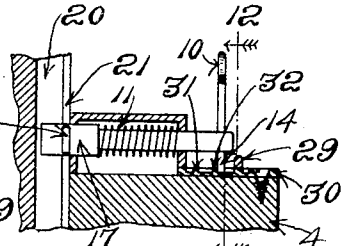


Fig. 11.

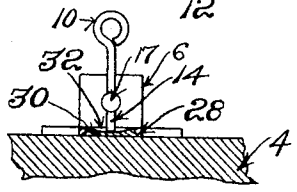


Fig. 12.

Witnesses:
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UNITED STATES PATENT OFFICE.

IVORY F. FRISBEE, OF BOSTON, MASSACHUSETTS.

SASH-LOCK.

No. 803,335. Specification of Letters Patent. Patented Oct. 31, 1905.

Application filed May 6, 1905. Serial No. 259,147.

To all whom it may concern:

Be it known that I, IVORY F. FRISBEE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Sash-Locks, of which the following is a specification.

The object of the invention is to produce a device by which the two sashes of a window may be either locked together to prevent any opening of either sash from the outside or to enable them to be locked together in a partially open position for ventilating purposes in such manner that a person from the outside cannot open them any farther unless the opening is already wide enough for the outsider to reach in and tamper with the lock.

I am aware that sash-fasteners have been made or patents granted therefor seeking to accomplish the purpose above described; but these devices, so far as I am aware, have been of a somewhat complicated character. The object of this invention is to produce a device of the character described which shall be simple and inexpensive in construction.

The invention will now be fully described with reference to the accompanying drawings, and the novel features thereof will be particularly pointed out in the claims at the close of the specification.

In the drawings, Figure 1 is a perspective view of a portion of the upper and lower sash of a window and a portion of the window-casing, showing my device attached to the upper rail of the lower sash and locked to the upper sash, the window being partially open. Fig. 2 is a vertical longitudinal section through the bolt-case, showing the sashes locked together. Fig. 3 is a vertical section through the bolt-case, showing the bolt in its most retracted position. Fig. 4 is a rear end view of the bolt-case sectioned through the locking-groove of the catch-plate on line 4 4 of Fig. 2. Fig. 5 is an end view showing the operating-lever turned down and the finger disengaged from the locking-groove. Figs. 6 to 9, inclusive, show a modified form of bolt and lock-plate. Fig. 6 is a perspective view showing the two sashes locked together closed and the catch-plate of the bolt-case formed with a locking-groove intermediate the forward locking-groove and the lip at the rear, so that the bolt may be locked in an intermediate position, and showing a different form of locking-plate and slot on the upper sash. Fig. 7 is a vertical section showing the bolt engaged with the locking-socket in the upper sash and the lever turned down disengaged from the catch. Fig. 8 is a sectional plan showing the bolt in semiretracted position and engaged with the channel of the upper sash when the sash is partly open, the catch-finger on the bolt being engaged by the catch-plate. Fig. 9 is an elevation showing the locking-plate attached to the vertical rail of the upper sash. Figs. 10 to 12, inclusive, show a modified form of catch-plate, in which there is an adjustable extension. Fig. 10 is a plan. Fig. 11 is a vertical longitudinal section. Fig. 12 is a cross-section on line 12 12 of Fig. 11.

Referring now to the accompanying drawings, A represents the lower sash, B the upper sash, and C the casing. Formed in the side rail 1 of the upper sash are a series of slots to receive the bolt of the sash-lock at different degrees of opening of the sash and also when the sash is entirely closed. Attached to the said side rail is a plate 2, provided with a series of holes 3, registering with the slots 19 in the side rail 1. The fastening device D is attached to the upper rail 4 of the lower sash in such position that the bolt 5 is adapted to engage with the bolt-holes in the side rail of the upper sash when the lower sash is raised or the upper sash is lowered to bring the bolt and sockets in alinement with each other.

The construction of the sash-lock is as follows: A bolt-casing 6 is attached to the upper rail of the lower sash in any suitable way. Preferably the bolt-casing is formed with a flanged base 7, having screw-holes by which it may be secured to the rail by screws 8. The bolt-casing is formed with a hole in each end, forming guides through which the bolt passes. The forward portion of the bolt is made larger than the rearward portion, forming a shoulder 9. Attached to the rear end of the bolt is a handle or lever 10 for operating the bolt. This handle forms a stop which limits the forward thrust of the bolt to prevent the bolt from sliding out of the casing and so that the shoulder 9 will always be inside of the casing. Surrounding the shank of the bolt inside of the casing is a spiral spring 11, one end of which abuts against the shoulder 9 and the other end of which abuts against the rear end of the chamber of the casing, so that when the bolt is retracted the spring will be compressed, and when the bolt is free to move forward again the spring will throw it forward. The spring should be of such length that the bolt cannot be retracted far enough to draw the head entirely back into the casing.

Projecting rearwardly from the base 7 of the bolt-casing is an extension 12, terminating in a lip 13. Instead of forming the lip on the extension-piece 12 integral with the base of the bolt-casing it might be made as a separate piece. Projecting laterally from the rear end of the bolt is a finger or stud 14. This finger may be integral with the handle 10, or it may be separate. As shown in the drawings, it is integral with the handle, which consists of a wire passing through a hole transversely of the bolt and secured by a set-screw 15. The particular method of fastening is not, however, material. The bolt is rotatable in its bearings as well as movable longitudinally and may be operated by the handle 10 to retract the bolt as well as to rotate it. Transversely of the upper face of the rear extension 12 of the base directly behind the bolt-casing is a groove or slot 16, which is preferably concaved to afford a clearance for the finger 14, to enable the handle 10 to be turned when the bolt is in its forward position to bring the handle into an upright position and to bring the finger down into the bottom of the groove or slot. When in this position, the sides of the groove will form a stop which will prevent the bolt from being retracted until the handle is turned down again to release the finger from the groove. In order to retract the bolt, the handle must be turned down into a horizontal position to release the finger from the groove. Then the bolt may be retracted by the handle until it brings the handle to the rear of the lip 13. Then by turning the handle up into the vertical position again the finger 14 will be brought down into engagement with the rear face of the lip, locking the bolt in an open position. While the bolt is thus held in its retracted position either sash may be opened at will to any distance. If it is desired to lock the window entirely closed by this device, the handle will be turned down to allow the bolt to shoot forward into the lowermost socket in the plate 2, when both sashes are closed. Then the handle will be turned up to bring the finger into engagement with the groove. If it is desired to partially open the sash for ventilating purposes, either the upper sash will be lowered or the lower sash will be raised, or both, until the desired degree of opening is given, and the bolt will be released to engage with the socket at the desired point. If the handle is turned down to disengage the finger from the lip that holds the bolt in its retracted position when raising or lowering the sash, the spring will automatically throw the bolt into engagement with the first slot that it comes to.

While I have described the device as especially intended for a sash-lock, it is obvious that it may be used as the main sash-fastener either in the manner already described by causing it to engage with the bottom socket in the side rail of the upper sash, or if it is desired to use the fastener simply for the purpose of fastening one sash the sockets might be made in the side casing of the window and the fastener placed lengthwise of the top rail at one end instead of crosswise of the rail.

In Figs. 6 to 9, inclusive, a modified form of lock plate and bolt are shown. In the head of the bolt 17 is formed a neck 18 by means of transverse grooves on two opposite sides of the bolt. When the sashes are closed, they are locked by the head of the bolt engaging with the socket 19 in the upper sash. A channel 20 in the vertical rail of the upper sash leads from the socket 19 upward as far as it is intended to have the sashes opened for ventilation. This channel is of less depth than the socket 19, so that when the bolt is in its full forward position engaged with the socket 19 the lower sash cannot be raised nor the upper sash lowered; but the said channel is of sufficient width to receive the head of the bolt, so that when the bolt is partially retracted it may move upward in said channel.

A lock-plate 21 is secured to the side rail 1 of the upper sash lengthwise of the channel 20 and is formed with a slot 22 directly in front of channel 20, but of less width, except at the lower end, where it is broadened out. Except for said broadened portion the slot is too narrow for the passage of the head of the bolt, but is of sufficient width for the neck 18 of the bolt when the bolt is turned to bring the narrow edge of the neck in alinement with the bolt. The broadened lower portion of the slot is in alinement with the socket 19 to permit passage of the head of the bolt through into the socket. By retracting the bolt from the socket 19 sufficiently to bring the neck of the bolt into the slot 22 and turning the bolt to bring the neck edgewise into line with the slot the sash may be opened the full length of the slot in the lock-plate, the bolt-head traveling up in the channel 20.

In order to retain the bolt in the half-retracted position, so that it will slide in the channel, the base-plate 24 is formed with a groove 25 intermediate between the forward groove 26, which holds it in the forward position, and a lip 27, which holds it in the fully-retracted position. When locked in this intermediate position, the sash may be raised and lowered at will.

In order to adapt the device to sashes of varying thicknesses, in which a greater or less length of movement of the bolt may be desired, it is preferable for such purpose to form the catch for the handle on a separate plate from the bolt-casing, so that the catches may be adjusted with varying relation to the bolt-casing. In the form shown in Figs. 10, 11, and 12 the extension-plate 28 of the bolt-casing is formed with a cut-out portion between the lip 29 and the bolt-casing, and the lip 29 is slotted on the under side in continua-

tion of the cut-out portion of the extension-plate to permit inserting a plate 30 to fill in the cut-out portion of the extension-plate. This plate 30 is concaved in that portion which fills the cut-out center of the extension-plate 28, so as to permit clearance of the finger 14 of the lever in the manner previously described, and is formed with lips 31 32 extending crosswise of the concavity to engage the finger in the forward and semiretracted position of the bolt. This plate 30 can be varied in its position forward or back according to the necessities of the sash to which it is applied to bring the lips 31 32 into proper position. When adjusted, it may be secured to the sash by means of screws.

The device may be made self-locking in the same manner as already described with reference to the construction shown in Fig. 1—that is, if the bolt is retracted to its most rearward position to unlock the bolt from the upper sash and the lever is turned to unlock the finger behind the rear lip and the lower sash is then raised or the upper sash lowered to bring the bolt out of alinement with the bolt-socket in the upper sash the lever may then be turned down to disengage the finger from the lip, and the spring will press the bolt forward into engagement with the lock-plate; but as the head of the bolt is larger than the slot in the lock-plate the sash will be free to slide up or down with the head of the bolt bearing against the outer face of the lock-plate until the sashes are closed to bring the bolt into alinement with the enlarged portion of the slot in the lock-plate, when the thrust of the spring will automatically throw the bolt into the bolt-socket and lock the sash.

By the use of a slotted lock-plate and channeled upper sash like that shown in Figs. 6 to 12, inclusive, if the sashes are locked together in the partially open position for ventilation—that is, with the head of the bolt in the channel 20 and the neck of the bolt in the slot in the lock-plate—it is impossible for a person on the outside to open the window any farther than allowed by the length of the slot in the lock-plate 20, because in order to withdraw the head of the bolt from the lock-plate to permit such further opening of the sash the sashes must both be entirely closed, so as to bring the head of the bolt into the broadened lower portion of the slot 22 in the lock-plate; but in order to thus close the window the outsider must withdraw his arm, and when the window is closed it will be impossible for him to insert his arm or any instrument to tamper with the lock.

I claim as my invention—

1. In combination with the upper sash of a window having in one of its vertical rails a slotted lock-plate, a sash-lock secured to the lower sash comprising a bolt-case, a bolt passing through guide-holes in opposite ends of the case and adapted to engage with the lock-plate in the upper sash, said bolt being both rotatable and slidable, a lever attached to the rearwardly-projecting portion of the bolt outside of the bolt-case, a finger projecting laterally from the rear end of the bolt, a catch-plate extending rearwardly from the rear end of the base of the bolt-case, and having a transverse slot with which said finger is adapted to engage by turning the bolt when in its forward position, locking it against rearward movement, said bolt being unlocked by turning it in the reverse direction, and a lip on said plate in the rear of said slot with which said finger is adapted to be engaged by again turning said bolt when it is retracted to lock it in a rearward position.

2. A sash-lock comprising a bolt that is both slidable and rotatable secured to the upper side of the lower sash, the bolt being formed with a neck and a head, a socket in the upper sash to receive the bolt-head when the sashes are both closed and lock them together, a vertical channel leading upward from said socket of less depth than said socket but of sufficient width to permit travel of the bolt-head therein when the bolt is partially retracted, a lock-plate secured to the upper sash in front of said channel having a vertical slot which is of sufficient width for the neck of the bolt but of less width than the head of the bolt except at its lower end, said lower end of the slot having an enlarged portion in alinement with said socket, to permit retraction of the bolt, and when the bolt is partially retracted it brings the head of the bolt into said channel and the neck of the bolt into alinement with said slot and the sash may be opened the length of the channel.

3. A sash-lock comprising a bolt that is both slidable and rotatable secured to the upper side of the lower sash, the bolt being formed with a neck and a head, a socket in the upper sash to receive the bolt-head when the sashes are both closed and lock them together, a vertical channel leading upward from said socket of less depth than said socket but of sufficient width to permit travel of the bolt-head therein when the bolt is partially retracted, a lock-plate secured to the upper sash in front of said channel having a vertical slot which is of sufficient width for the neck of the bolt but of less width than the head of the bolt except at its lower end, said lower end of the slot having an enlarged portion in alinement with said socket, to permit retraction of the bolt, and when the bolt is partially retracted to bring the head of the bolt into said channel and bring the neck into alinement with said slot so that the sash may be opened the length of the channel, a series of catches on the lower sash and a finger carried by said bolt which is adapted to engage with said catches by partially turning said bolt, one of said catches being adapted to lock the bolt against retraction when it is entered in said socket to lock

the sashes closed, another catch being adapted to lock the bolt against axial movement when the bolt is in the partially-retracted position for the bolt-head to travel in the channel, and a third catch being adapted to lock the bolt in a fully-retracted position entirely withdrawn from the lock-plate.

4. A sash-lock comprising a bolt-case secured to the top of the lower sash, a bolt passing through guide-slots in opposite ends of the case, said bolt being both rotatable and slidable, a lever and a finger attached to the rear end of the bolt and projecting therefrom in different directions from each other, a catch-plate at the rear end of the bolt-case having a series of catches with which said finger is adapted to engage to lock the bolt in either its most forward or most retracted position or partially-retracted position as desired, in combination with a bolt-socket in the upper sash to receive the bolt in its most forward position when the sashes are both closed, a vertical channel connecting with the said socket but of less depth than said socket, and of sufficient width for travel of the head of the bolt therein, a neck in said bolt-head, and a lock-plate secured to the sash-rail in front of said channel having a slot in which the neck of the bolt may travel but of less width than the head of the bolt.

5. A sash-lock comprising a bolt-case, a bolt passing through guide-holes in the opposite ends of the case, said bolt being both rotatable and slidable, a lever and a finger projecting laterally from the rear end of the bolt in different directions from each other, and an adjustable catch-plate at the rear end of the bolt-case having a series of catches with which said finger is adapted to engage to lock the bolt in varying positions, said catch-plate being adjustable with relation to the bolt-case.

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

IVORY F. FRISBEE.

Witnesses:
WILLIAM A. COPELAND,
ROBERT WALLACE.