April 14, 1925. 1,533,725

F. M. DAVENPORT

SASH OR SCREEN LOCK

Filed May 10, 1923 2 Sheets-Sheet 1

Fig. 2.

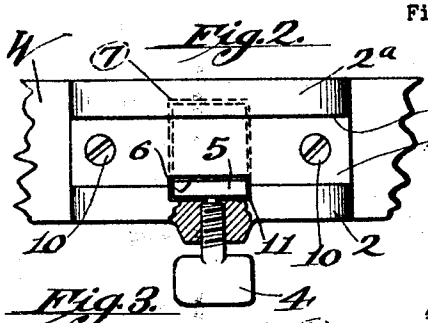


Fig. 1.

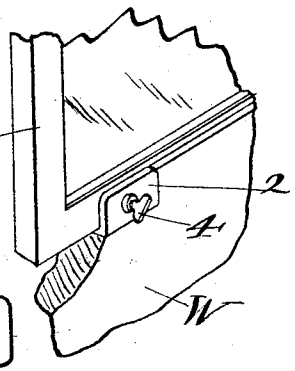


Fig. 4.

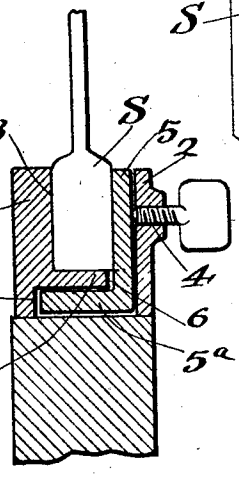


Fig. 3.

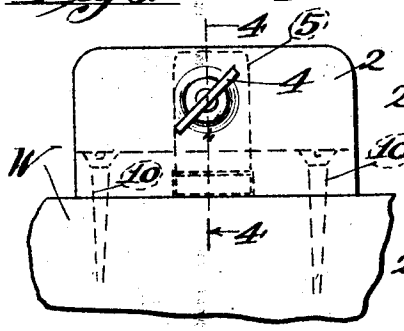


Fig. 5.

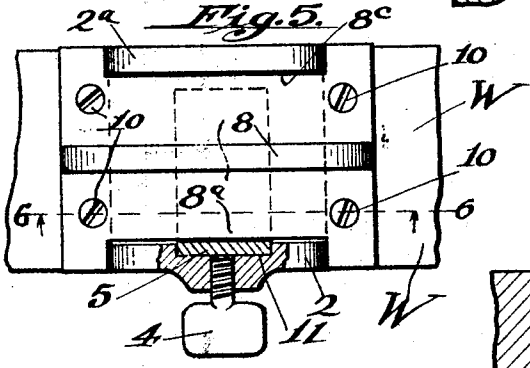


Fig. 6.

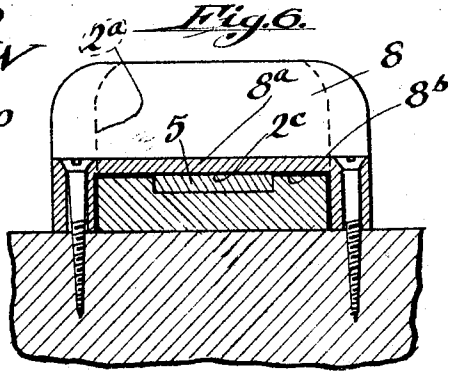


Fig. 7.

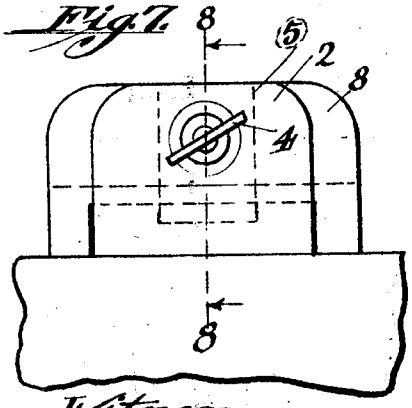
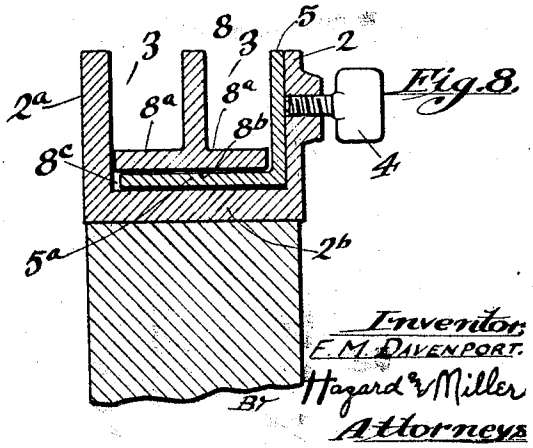


Fig. 8.



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Wm. J. Hall.

Inventor:
F. M. DAVENPORT.
By Hazard & Miller
Attorneys

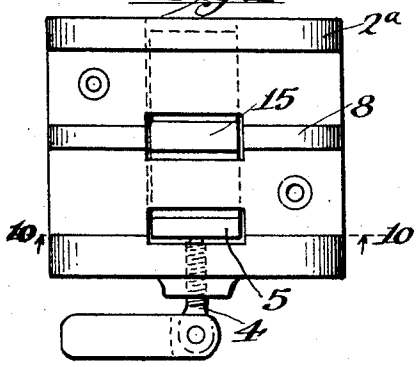
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F. M. DAVENPORT

SASH OR SCREEN LOCK

Filed May 10, 1923 2 Sheets-Sheet 2

Fig. 9.



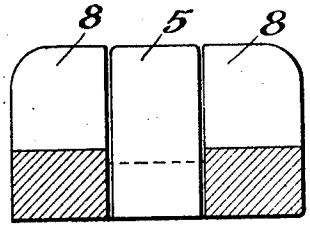
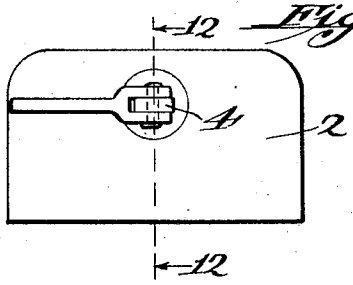


Fig. 10

Fig. 11.



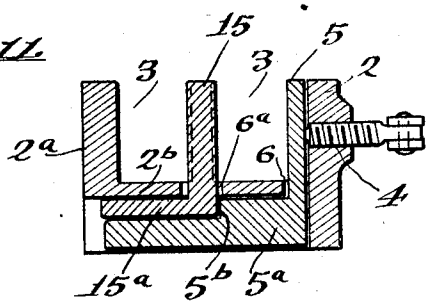


Fig. 12

Fig. 13.

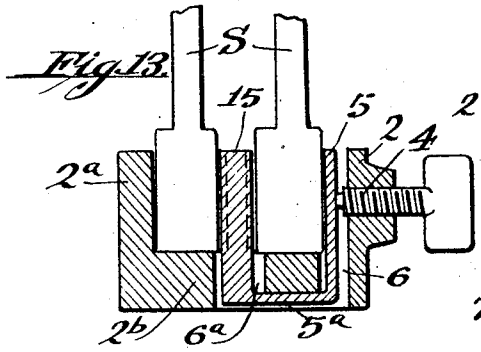


Fig. 14.

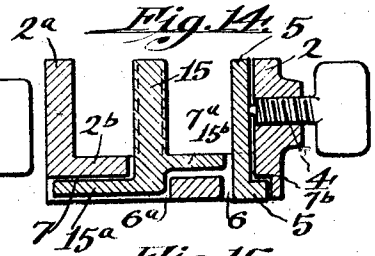


Fig. 15

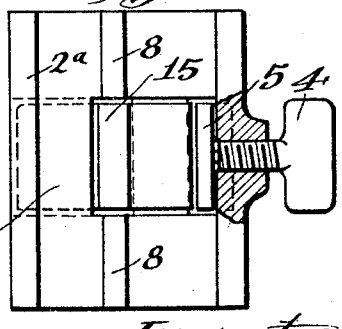
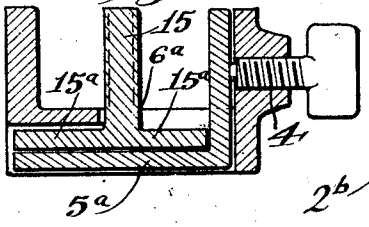


Fig. 16.



Witness
Wm. F. Hall

Inventor:
Fred M. Davenport
By Hazard and Miller
Attorneys

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UNITED STATES PATENT OFFICE.

FRED M. DAVENPORT, OF LOS ANGELES, CALIFORNIA.

SASH OR SCREEN LOCK.

Application filed May 10, 1923. Serial No. 637,963.

To all whom it may concern:

Be it known that I, FRED M. DAVENPORT, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Sash or Screen Locks, of which the following is a specification.

This invention relates to locks, and more particularly to sliding sash or screen locks, and has for its object to provide a means for effectively locking sliding sashes in their ways. It is an object to provide a sash frame lock adapted to fasten in position either one of a plurality of sashes or to fasten a contiguously arranged set or plurality of sashes. Another object is to provide a sash or screen fastener or lock that may be readily installed in a framework or guide in which a sash or sashes are slidably movable.

Another object is to provide a sash lock of few and substantial parts, and which are all of simple form so as to obtain a low cost of manufacture. Another object is to provide a sash lock in which, when the parts are assembled, they are not readily dislodged and displaced or lost.

Other objects and advantages will be made manifest in the following specification of embodiments of the invention illustrated in the accompanying drawings, wherein—

Figure 1 is a perspective showing a fragment of a casing or wall and a slidable sash therein, and illustrating the applied lock.

Fig. 2 is a plan of an embodiment of a lock adapted for fastening a single sash.

Fig. 3 is a side elevation of the same.

Fig. 4 is a cross section on line 4—4 of Figure 3.

Fig. 5 is a plan of a form of double sash lock.

Fig. 6 is a longitudinal section on line 6—6 of Figure 5.

Fig. 7 is a side elevation of the device of Figure 5.

Fig. 8 is a cross section on line 8—8 of Figure 7.

Fig. 9 is a plan of a modified form of double sash lock.

Fig. 10 is a longitudinal section on line 10—10 of Figure 9.

Fig. 11 is a side elevation of the device of Figure 9.

Fig. 12 is a transverse section on line 12—12 of Figure 11.

Fig. 13 is a cross section of another modified form of double sash lock.

Fig. 14 is a transverse section of a form of the sash lock incorporating a tiltable leaf.

Fig. 15 is a plan of the device of Figure 14.

Fig. 16 is a further modification of the lock.

In Figures 2 to 4, inclusive, there is shown a form of the invention which is adapted for the securing of a single sliding sash S, which may be shifted into and from a contiguous position with respect to the sash lock. This form of the lock consists of what might be termed a box having a front wall 2 and a rear, parallel wall 2^a, connected by a bottom web 2^b and thus forming a guideway 3 between the walls and above the bottom or web into which the sash S may be run or may stand, and is adapted to be clamped or locked.

The clamping of the sash is secured as by means of a suitable clamping device shown herein as a screw 4, threaded in the side wall 2 of the box and adapted to be turned in to abut against the contiguous portion of an effective clamping element including an upwardly extending blade or shoe 5, which passes through an aperture 6 provided therefor in the bottom or web 2^b. The lower face of the web is recessed or chambered at 7 to receive the transversely extending lug or tongue 5^a, forming a part of the clamping element. The aperture 6 has a sufficient transverse dimension or width to provide for desired play of the shoe element 5 so that this can be shifted positively inwardly under pressure of the screw 4 to engage the frame of the sash S, and force this against a contiguous supporting portion of the box, such as the wall 2^a.

It will be seen that after this form of lock has been installed, as in a wall or sash guide W, Figure 1, the movable element, as the shoe part 5, cannot be dislocated and lost from its position, nor can it be withdrawn from the box without the entire removal of the box, which may be secured as by means of screws 10, which may be driven through the bottom or web of the box.

In Figures 5 to 8, inclusive, there is shown a form of the lock which is adapted for securing a plurality of sashes, or any one of the sashes, that may be shifted into the lock or that may stand normally and loosely in the box. This box includes the inner or

front wall 2, the opposite, parallel wall 2^b and the web or bottom 2^b, but in this form this box part is adapted for movement transversely as to a stationary element including an upstanding blade portion 8, having a bridge or bottom portion in the form of oppositely extending flanges 8^a. The bottom of the bridge is recessed at 8^b to receive the web of the shoe. This bridge element is adapted to be secured as by screws 10 to the primary wall or sash guide W, and therefore forms a stationary bridge beneath and as to which the box structure is relatively movable when the clamping or locking screw 4 is screwed in. The parallel, longitudinal edges of the flanges of the bridge element, which is provided with an intermediate, upstanding blade 8, are shown as recessed at 8^c to receive the side walls 2 and 2^a of the box. The wall 2 is shown as recessed on its inner face at 11 to form a shallow pocket in which may rest the contiguous, upwardly extending and relatively movable member engaged by the screw 4.

In Figure 8 there is shown an L-shaped shoe member 5, having a laterally extending, tongue portion 5^a interposed between the bottom 8^a of the bridge and the web 2^b of the box, which is recessed at 2^c to receive the tongue 5^a. Thus, if a plurality of sashes are in the spaces 3 on the sides of the blade 8 of the bridge, then, if the screw 4 is turned inwardly, the shoe element 5 will be shifted solidly against the contiguous sash in the space or way 3, and there will be a concurrent, outward movement of the wall 2 of the box as to the near sash engaged by the shoe 5. At the same time, the sash which is engaged by the wall 2^a of the box will be clamped against the blade 8 of the bridge by the shifting of the box as to the bridge, with the result that all of the sashes in the lock spaces will be clinched by the single setting up action of the screw 4.

In this form of lock, if there is but one sash occupying a position as between the blade 8 of the bridge and the shoe 5, then, when the screw 4 is screwed in, the box shifts laterally until its movement is limited by engagement with the contiguous edge of a flange 8^a of the bridge, and thereafter the force of the screw will be spent against the shoe 5, which will be driven against the contiguous sash. If a sash is disposed between the blade 8 and the wall 2^a of the box and no other sash is in place, then, when the screw 4 is turned in, the shoe 5 is driven solidly against the edge of the bridge and the reaction shifts the box as to the bridge and draws the wall 2^a of the box against the contiguous sash, and the latter will be bound in by the lock device. Thus it will be seen that this form of lock will secure either of two positioned sashes or will secure both positioned sashes.

In Figures 9 to 12, inclusive, there is shown a modified form of double sash lock in which the box has a front or side wall 2, and a parallel wall 2^a and a bottom or web 2^b, through which may be passed fastening screws 10 to fix the box in position. In this form of the invention the shoe 5, disposed adjacent to the wall 2 to be engaged by the clamping screw 4, has a laterally extending tongue 5^a, which is downwardly recessed to form a shoulder 5^b, and in this recess is disposed a second shoe including an upwardly extending clamp part 15, having a laterally extending tongue 15^a resting on the top of the tongue 5^a and contiguous to the shoulder 5^b thereof. The shoe or blade 15 is positioned intermediately between the shoe 5, which is movable, and the fixed box wall 2^a, and extends up through an aperture 6^a in the web 2^b, whilst the shoe 5 extends up through an aperture 6 provided therefor.

If two sashes are positioned in the ways or spaces 3 formed on either side of the intermediate clamping shoe 15, and the clamping screw 4 be turned in, the action is, first, to shift the shoe 5 against its contiguous sash, and this will be shifted against the intermediate shoe 15 and this, in turn, forced against the sash next against the fixed wall 2^a, all of the parts thus being fastened by the screw 4. If there be only one sash in the lock and it occupies a position between the wall 2^a and the shoe 15, then, if the screw 4 be turned in, it shifts the shoe 5 inwardly until its shoulder 5^a engages the contiguous portion of the shoe 15, and this will be forced against the positioned sash and thus locked. If there be only one sash in the lock and it be disposed between the shoe 5 and the shoe 15, then, when the screw 4 is turned in, the shoes, being spaced by the sash, will be shifted together with the sash until the shoe 15 is limited by the far wall of its aperture 6^a, and then when final pressure is applied by the screw, the shoes and the sash will be jammed tight on each other and held. In such case, the shoulder 5^a will be held out of contact with the contiguous portion of the shoe 15 by reason of the intervening sash between the shoes 5 and 15.

In Figure 13, a form of the lock is shown as including a box having a wall 2 and a parallel wall 2^a and a connecting bottom or web 2^b. This web is perforated at 6 and at 6^a to provide for the reception of upwardly extending parts 5 and 15, forming clamp shoes, which are connected across their lower ends by a connecting portion 5^b. This shoe element, therefore, approximates a U-shaped outline, and is applied by upward insertion through the bottom or web 2^b. Preferably, the shoe portion 5 is thinner than the shoe portion 15, and is yieldable with respect thereto. If there be two sashes S in the box, one of the sashes will be disposed between

the shoes 5—15 and there will be locked between the shoe 15 and the wall 2^a. If the screw 4 now be turned, the shoes 5—15 and the sash S will be concurrently forced against the wall 2^a and bound by the screw.

If there be only one sash interposed and it be locked between the shoe 15 and the wall 2^a, then, when the screw 4 is turned in, the unitary shoe device 5—15 will be shifted and the shoe 15 will press against the sash and it will be held against the wall 2^a; meanwhile the shoe 5, being unsupported by a contiguous sash, will be bent or sprung inwardly under screw pressure. Should there be only one sash in the lock and it should be positioned between the shoes 5—15, then the inwardly turned screw 4 will shift the unitary shoes 5 and 15 with the interposed sash toward the far wall of the aperture 6^a in which the shoe 15 extends. Engagement of the shoe 15 by its limiting stop will thus support the sash S against the shoe 5 while this is sprung inwardly by the screw 4.

In Figures 14 and 15, the improved lock includes a wall 2 and a parallel wall 2^a connected by the bottom or web 2^b, which has an aperture 6 and an aperture 6^a. The bottom or web is recessed in its lower face at 7 and is recessed in its top face at 7^a, these recesses being substantially diagonally opposite and each communicating with the intermediate aperture 6^a. This provides a chamber in which is disposed the central, upwardly extending blade or shoe 15, which has a lateral tongue 15^a disposed in the recess 7, and a lateral tongue 15^b disposed in the upper recess 7^a. The shoe 5, disposed contiguous to the wall 2, to be engaged by the screw 4, has a short, lateral lug 5^e entering a recess 7^b in the bottom of the wall 2, and therefore being retained against vertical withdrawal from the box structure when the box has been mounted. The shoe tongue 15^b extends toward the contiguous part of the tongue 5 and is adapted to be engaged by the same when the screw 4 is turned in and when there is no sash interposed between the shoes 5—15, and when a sash is positioned between the shoe 15 and the wall 2^a. The screw will, therefore, in such case, serve to turn the shoe 5 against the tongue of the shoe 15, and this will bind on the interposed sash.

If only one sash is disposed in the lock and is locked between the shoes 5—15, then the shoe 5 will engage the sash and the latter will press against the shoe 15 and this will be shifted to the limit of its movement in its aperture 6^a and the sash clamped between the shoes. If there be two sashes disposed one on each side of the shoe 15, the sashes will be bound between the wall 2^a, the shoe 15 and the shoe 5, when the screw 4 is turned in.

In Figure 16, the box is of substantially the same construction as that shown in Figure 12, but there is a difference in the construction of the shoes. The shoe 5 has at its lower end a laterally extending and elongated tongue 5^a, and resting upon this are the bottom flanges 15^a formed on each side of the lower end of the tongue 15, which projects up through the intermediately disposed aperture 6^a. The action in this form is that, if two sashes are disposed one on each side of the shoe 15, they will be clamped between the shoe 15 and the wall 2^a and the shoe 5 when the screw 4 is driven in.

If there be a sash only between the shoes 5—15, these shoes, with the interposed sash, will be shifted until the shoe 15 is limited by the far wall of the aperture 6^a. If there be only a sash between the shoe 15 and the fixed wall 2^a, then the shoe 5, under pressure of the screw 4, engages the contiguous end of the shoe flange 15^a and thus the shoe 15 is forced against the sash, which will bear against the contiguous wall 2^a.

Further embodiments, modifications and variations may be resorted to within the principle of the invention.

What is claimed is:

1. A double sash lock comprising a box having a bottom for attachment to a support, a side for mounting, a clamping screw, a second side rigid with the bottom and opposite the first side, there being an opening through the bottom, a shoe fitting in the opening against the side and having a laterally extending tongue, a set screw mounted through the side and engaging the shoe, a central tongue having flanges resting upon the first tongue and extending through the opening in the bottom so as to form two spaces for the reception of sash frames and so as to grip and lock the sash frames by manipulation of the set screw.

2. A sash lock comprising a box adapted for attachment to a support and having two rigid side walls and a large opening in the bottom, a set screw mounted through one side wall, an L-shaped shoe mounted in the opening against the set screw, a T-shaped shoe mounted through the opening and having flanges resting upon one leg of the L-shaped shoe, and one of the flanges extending under the bottom of the box.

3. A sash lock comprising a box adapted for attachment to a support, said box having a side wall adapted to carry a shoe engaging means, there being an opening formed in the bottom of said box, a second side wall opposite the first mentioned side wall, and a shoe having a bottom flange disposed within said opening, said shoe being laterally slideable and having an upright portion engageable by said shoe engaging means.

4. A sash lock comprising a box adapted for attachment to a support, said box having a side wall carrying a shoe engaging means,

there being an opening formed in the bottom of said box, a second side wall opposite the first mentioned side wall, an inwardly extending lug formed integral with said second side wall, and a laterally slideable shoe having a horizontal flange disposed in said opening and extending beneath said lug.

5. A sash lock comprising a box adapted for attachment to a support, said box having a side wall carrying a shoe engaging means, a second side wall opposite the first mentioned side wall, a laterally slideable shoe having a bottom flange disposed adjacent the bottom of said box and an upright portion engageable by said shoe engaging means, and a second shoe disposed within said box, said second shoe having a bottom flange resting upon the bottom flange of the first mentioned shoe.

6. A sash lock comprising a box adapted for attachment to a support, said box having a side wall carrying a shoe engaging means, there being an opening formed in the bottom of said box, a second side wall opposite the first mentioned side wall, an inwardly extending lug formed integral with said second side wall, and a laterally sliding shoe having a horizontal flange disposed in said opening and extending beneath said lug, and a second shoe disposed within said box, said second shoe having a bottom flange resting upon the horizontal flange of the first mentioned shoe, the bottom flange of the second mentioned shoe also extending beneath said lug.

7. A sash lock comprising a box adapted for attachment to a support, said box having a side wall adapted to carry shoe engaging means, there being an opening formed in the bottom of said box, a second side wall opposite the first mentioned side wall, and a shoe having a laterally extending bottom portion disposed within said opening, said shoe being laterally slidable and having an upright portion engageable by said shoe engaging means.

In testimony whereof I have signed my name to this specification.

FRED M. DAVENPORT.