Aug. 13, 1957 V. H. ENCKEVORT 2,802,682

SASH LOCK

Filed Sept. 20, 1955 3 Sheets-Sheet 1

FIG. 1

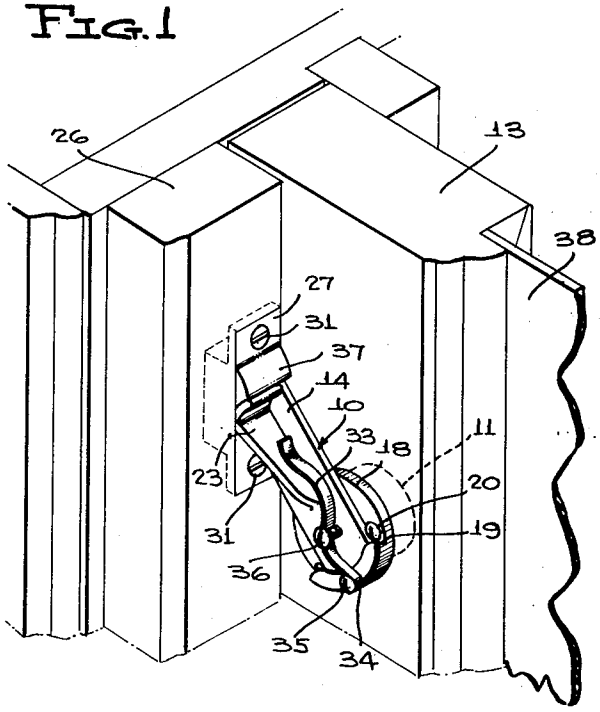


FIG. 2

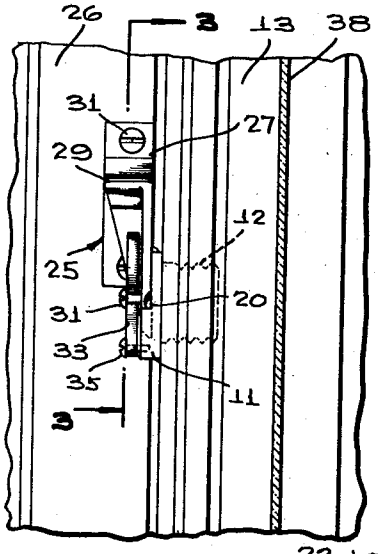


FIG. 4

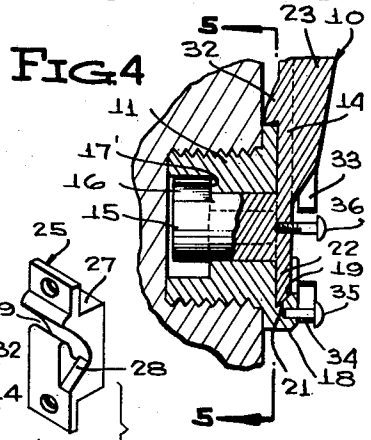
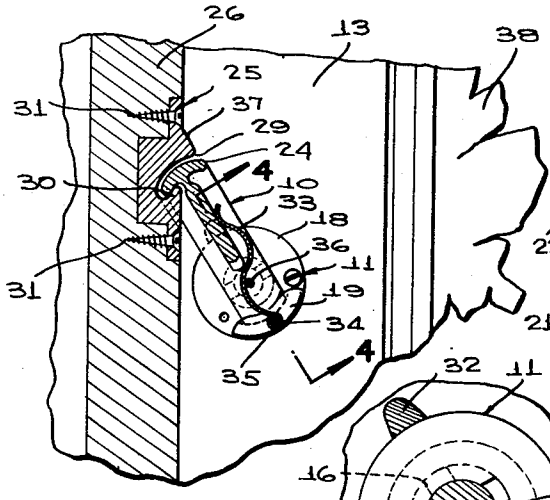


FIG. 3



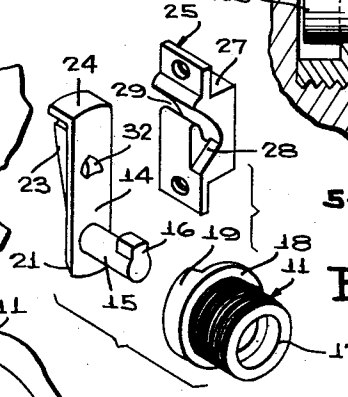


FIG. 6

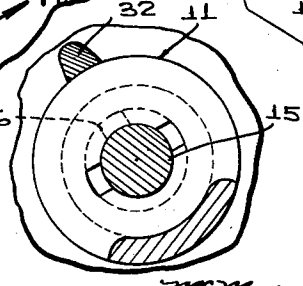


FIG. 5

INVENTOR.
VICTOR H. ENCKEVORT
BY

McMorrow, Berman & Davidson
ATTORNEYS

Aug. 13, 1957 V. H. ENCKEVORT 2,802,682

SASH LOCK

Filed Sept. 20, 1955 3 Sheets-Sheet 2

FIG. 7

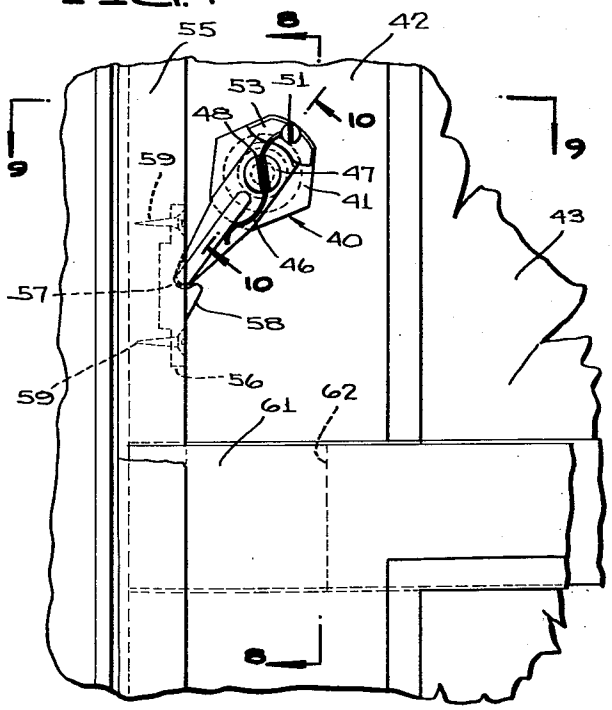


FIG. 8

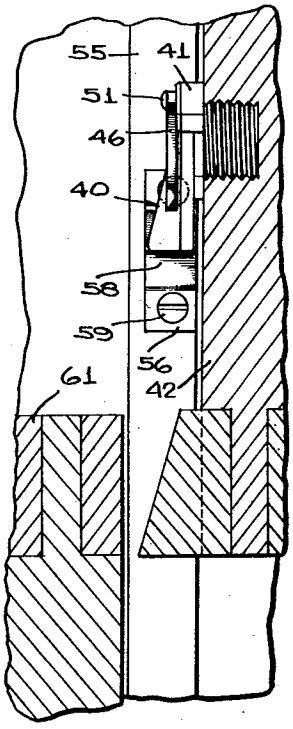


FIG. 9

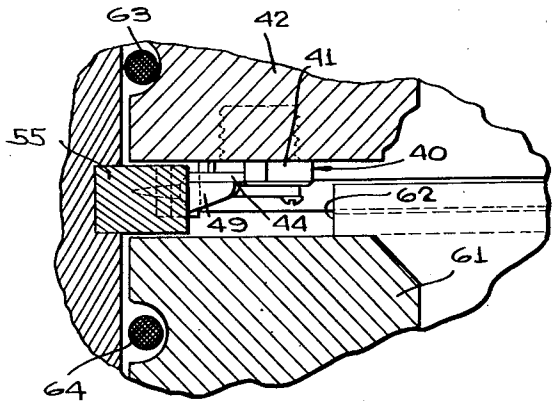
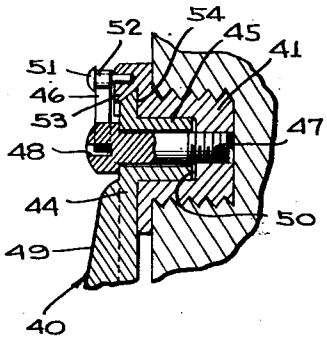


FIG. 10



INVENTOR.
VICTOR H. ENCKEVORT
BY

McMorrow, Berman & Davidson
ATTORNEYS

Aug. 13, 1957 V. H. ENCKEVORT 2,802,682

SASH LOCK

Filed Sept. 20, 1955 3 Sheets-Sheet 3

FIG. 11

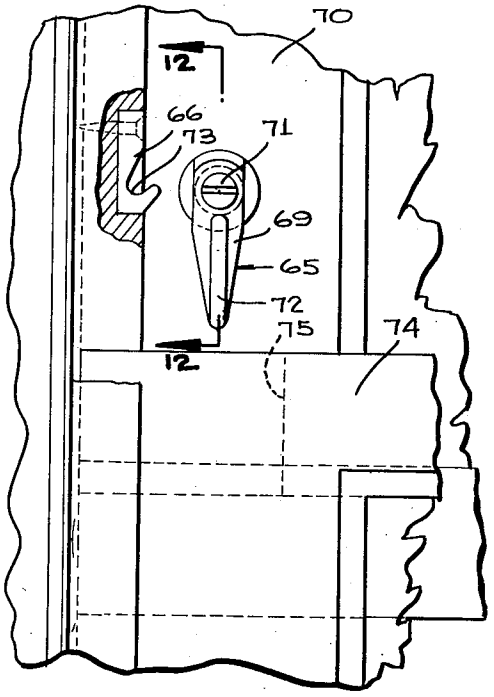


FIG. 12

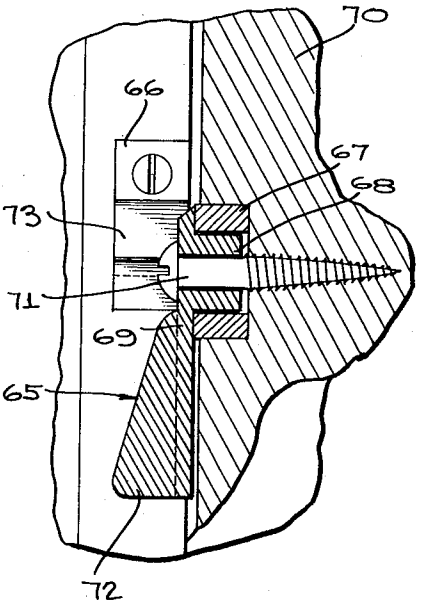


FIG. 13

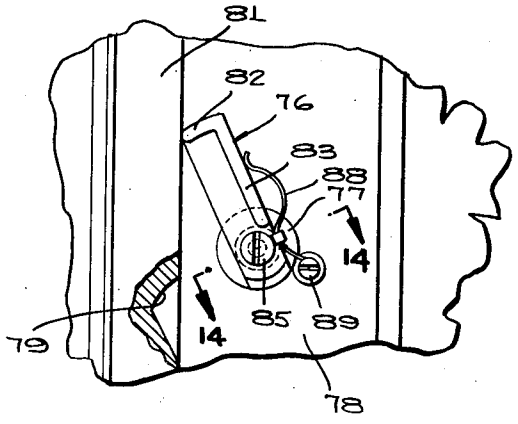
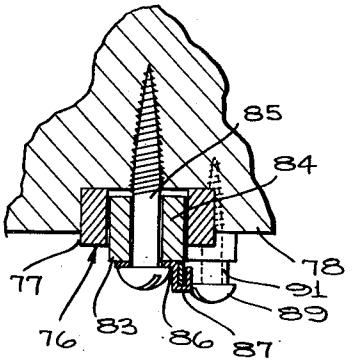


FIG. 14



INVENTOR.
VICTOR H. ENCKEVORT
BY

McMorrow, Berman & Davidson
ATTORNEYS

United States Patent Office 2,802,682 Patented Aug. 13, 1957

2,802,682

SASH LOCK

Victor H. Enckevort, San Antonio, Tex.

Application September 20, 1955, Serial No. 535,368
4 Claims. (Cl. 292—128)

This invention relates to improvements in window sash locks.

An object of the present invention is to provide a more practical and efficient sash lock for positively locking a window sash against opening movement, which utilizes means which forces the sash into binding engagement with the side of the window frame opposite that on which the sash is installed when force is applied to the sash to open it.

Another object of the present invention is to provide a sash lock which can be installed as a safety lock for locking a window sash in partially open position, and preventing further or complete and unauthorized opening of the window.

A further object of the present invention is to provide a sash lock which can be installed either upon the upper or the lower sash of vertically-movable windows on either the left or right hand sides of the sashes, and which also can be used upon horizontally-sliding window sashes.

A still further object of the present invention is to provide a sash lock of great strength which is simple in structure and composed of few parts readily assembled, and which is commercially practical.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in connection with the annexed drawings, in which:

Figure 1 is an isometric view of a sash lock of the present invention showing it installed upon the inner face of a lower sash and upon the adjacent sash stop which forms a guide member for the sash,

Figure 2 is an edge elevational view of the assembly of Figure 1,

Figure 3 is a section taken on the line 3—3 of Figure 2,

Figure 4 is a section, on an enlarged scale, taken on the line 4—4 of Figure 3,

Figure 5 is a section, taken on the line 5—5 of Figure 4,

Figure 6 is an isometric exploded view of the assembly of Figure 1,

Figure 7 is an elevational view of another form of sash lock of the present invention showing it in locking position and installed upon the inner face of an upper sash, the dotted lines showing indicating the holding means secured to the adjacent parting strip which forms a guide member for the sash,

Figure 8 is a section taken on the line 8—8 of Figure 7,

Figure 9 is a section taken on the line 9—9 of Figure 7,

Figure 10 is a section taken on the line 10—10 of Figure 7,

Figure 11 is an elevational view of still another form of sash lock of the present invention showing it installed upon an upper sash and in unlocked position with the upper sash partially lowered, and with a portion of the parting strip broken away showing the holding means installed therein,

Figure 12 is a section taken on the line 12—12 of Figure 11,

Figure 13 is an elevational view of yet another form of sash lock of the present invention, showing it in unlocked position with the sash partially open, and showing the guide member for the sash partially in section, and

Figure 14 is a section, on an enlarged scale, taken on the line 14—14 of Figure 13.

Referring in greater detail to the drawings in which like numerals indicate like parts throughout the several views, and first to Figures 1 to 6 thereof, the sash lock of the present invention therein shown is designated by the reference numeral 10, and comprises a supporting socket 11 having external threads secured in a hole 12 provided in a sash stile 13, the hole being indicated in dotted lines in Figure 2 and extending inwardly from the inner face of the sash stile 13, here shown to be the left-hand one of the sash stiles which constitute the frame side members of a lower window shash.

The sash lock 10 further comprises a locking arm 14 having on one end a lateral spindle 15 having a lateral lug 16 on its free end, the spindle 15 being rotatably journaled in the socket 11. A circumferential slot 17 is provided in the under end of the socket which enables use of the lock upon either the right or the left-hand sash stiles. A shoulder 17' at the inner end of the bore 17 bears against the lug 16 and retains the spindle 15 in the socket 11. A peripheral flange 18 is provided on the outer end of the socket 11 and is arranged so that an arcuate shaped shoulder 19 formed on the flange 18 overlies the beveled edge 21 of an extension 22 on one end of the arm 14 when the arm 14 is in its locking position. A screw 20 threadedly secured in the flange 18 serves as a stop for the arm 14. The outer side of the arm 14 is provided with longitudinal lateral 23 forming a gripping means and reinforcing the arm 14. The free end of the arm 14 is provided with a transversely curved dog 24.

A keeper 25 is mortised into the sash stop 26 and comprises a block 27 having a notch 28 along its inner side for receiving one edge of the arm 14 and a downwardly curved slot 29 defining at its lower end a horizontally disposed ledge 30. One end of the dog 24 is arranged to engage behind the ledge 30 with the dog bearing against the wall of the slot 29 to hold the sash against movement relative to the sash stop 26. A boss 32 projecting from the inner side of the arm 14 bears against the periphery of the flange 18 to resist movement of the arm 14 under twisting and compressive forces.

Spring means is provided operatively connected to the arm 14 for biasing the arm 14 toward its locking relation to the keeper 25, comprising a leaf spring 33 having an eye at one end surrounding a screw 35 which fixes the spring to the shoulder 19 of the socket 11, with the free end of the spring 33 bearing against one side of the rib 23 of the arm 14. The free end of the spring 33 is held in place under tension by another screw 36 threaded in the arm 14 and bearing against the side of the spring remote from the rib 23. The keeper block 27 is provided with a projection 37 which reinforces the block 27 and serves as an abutment for the dog 24 of the arm. The window pane of the sash is indicated by the reference numeral 38 in Figures 1 to 3, inclusive.

In its locking position the arm 14 is at an upward and laterally outward angle to the perpendicular, so that initiation of opening movement of the window sash forces the window sash against the stile of the window frame opposite that containing the keeper 25, so as to jam the sash against the opposite stile with a braking action.

In Figures 7 to 10, inclusive, the form of sash lock of the present invention therein shown and indicated generally by the reference numeral 40 comprises a socket 41 having external threads mounted in a hole provided in the sash stile 42 of an upper window sash, the pane of which is indicated by the reference numeral 43.

The lock 40 further comprises a locking arm 44 having on one end a lateral hollow spindle 45 received in a circular recess 50 provided in the socket 41, the spindle 45 itself receiving a bolt 47 which is threaded into the inner end of the socket 41. A spring 46 of similar size and shape as the spring 33 employed in the first described form of the invention biases the arm 44 to its locking

position at a downward angle to the perpendicular as shown in Figures 7 and 8. The spring **46** traverses a slot **48** provided in the head of the bolt **47**. The free end of the spring **46** bears against one side of an upstanding rib **49** provided on the arm **44** and its other end is secured to the socket member by means of a screw **51** traversing an eye **52** formed in the end of the spring, the screw **51** being received in a tap hole formed in a retaining flange **53** which extends around a segment of the periphery of the socket **41**. The inner end of the arm **44** has a beveled edge **54** bearing against a beveled shoulder formed on the flange **53** and serves to resist compressive forces upon initiation of downward movement of the sash of which the sash stile **42** is a part.

A keeper **55** is provided fixedly attached to the parting strip **55'** which forms a part of the guide means for the sash stile **42**, and comprises a block **56** having a slot **57** therein with an outwardly projecting ridge **58** at the lower end which serves as an abutment, together with the wall of the slot **57**, for the free lower end of the arm **44** when the arm is in its locking position at a downward and outward angle to the perpendicular. In this instance, the free end **59** of the arm **44** directly engages the slot **57** and the ridge **58** and serves as a dog.

Wood screws **59** secure the keeper block **56** to the parting strip **55**.

In the form of Figures 7 to 10, provision must be made for permitting the upper sash of which the sash stile **42** is a part, to be lowered relative to the lower sash **61**. With the sash lock **40** projecting from the inner side of the upper sash stile **42**, the outer side of the related stile of the lower sash is cut away, as indicated at **62** in Figures 7 and 9, to provide a slot or groove through which the sash lock can subside. Upon upward movement of the upper sash from a lowered position, the arm **44** will automatically engage the keeper **55** so as to hold the upper sash against further upward movement. The sash cords for the upper and lower sash are indicated by the reference numerals **63** and **64**, respectively.

The form of the invention shown in Figures 11 and 12 comprises a sash lock **65** and a keeper **66**. The sash lock **65** comprises a socket **67** of hollow cylindrical form receiving within it the hollow spindle **68** of an arm **69** which is positioned inwardly of the inner side of the sash stile **70** forming a part of the upper sash frame. A wood screw **71** traverses the bore of the spindle **68** and enters the wood of the sash stile **70** and secures the arm and the socket in place.

The arm **69** is provided with a longitudinal lateral rib the free end of which is contiguous to the free end of the arm **69**. The side edges of the arm taper toward the free end of the arm and the free end of the rib **72**. The free ends of the rib **72** and of the arm **69** are rounded and arranged to be received within the downwardly slanting notch **73** of the keeper **66** for abutting engagement with the sides and end of the notch **73** upon initiation of movement of the sash to open position. This initiation of movement of the sash to open position tends to shift the sash towards the opposite side of the window frame and to jam it thereagainst.

The form of the invention of Figures 11 and 12 is shown without a biasing spring. A biasing spring can be incorporated in the same way as shown in Figures 13 and 14. The lower sash **74** is cut away along a line indicated by the reference numeral **75** to provide room for the passage of the sash lock **65** behind the lower sash when the upper sash of which the sash stile **70** is a part is moved downwardly to an open position.

Referring to Figures 13 and 14, a form of the invention is shown therein in which low cost of the sash lock is considered and the overall appearance of the sash lock is not considered. The sash lock in this form of the invention is indicated generally by the reference numeral **76** and includes a hollow cylindrical socket **77** mounted within a hole in a portion of a sash **78** inwardly of the edge of the sash **78** and on the inner side thereof. A keeper notch **79**, cut by a chisel or by other means, is provided in an adjacent portion of the frame of the window which forms a guide member for the sash **78**, the frame portion being indicated by the reference numeral **81**. The notch **79** is arranged to receive a transverse dog on the free end and on the outer side of the locking arm **83**.

The arm **83** is provided with a hollow lateral spindle **84** which on the end of the arm **83** remote from its free end the spindle **84** is received within the socket **77** and is held in place by means of a wood screw **85**, there being provided under the head of the wood screw **85** a washer **86** having an outstanding eccentric lug **87** under which is clipped or held the intermediate portion of a biasing spring **88**. The free end of the spring **88** bears against one side of the arm **83**. The other end of the spring is anchored by means of a wood screw **89** traversing an eye **91**.

It is an important feature of the present invention, in each of the forms here illustrated and described, that the components may be dimensioned so as to be interchangeable where practical and preferably made in units suitable for either the left side or the right side of a window sash.

Preferably, a sash lock constructed according to the present invention, is installed upon the respective sash stiles in a position in which they cannot be reached by the arm and hand of an intruder when a sash of the window is left in a partially-opened position.

Further, it has been found that the preferred locking angle of the arm with respect to the perpendicular or to the longitudinal axis of the sash upon which it is used is approximately 35 degrees.

What is claimed is:

1. In a sash lock, a supporting socket having a bore extending from one end to the other end, a locking arm having a spindle projecting perpendicularly from one side thereof adjacent one of its ends positioned so that the spindle extends into said bore inwardly from one end of said socket, means on the free end of said spindle and releasably engageable with means formed in the bore of said socket for detachably securing said spindle within said bore, a peripheral flange on said one end of said socket, an arcuate shaped shoulder projecting from the periphery of said flange, said shoulder facing away from said one end of said socket, means on said one end of said arm and fixedly engaging said shoulder, and keeper engaging means on the other end of said arm.

2. The sash lock according to claim 1 which includes in addition a lateral projecting from the other side of said arm, and a leaf spring having one end fixed to said shoulder and having the other end bearing against said lateral for biasing said arm in one direction.

3. The sash lock according to claim 1 which includes in addition a boss on said one side of said arm between the ends thereof and engageable with said flange.

4. The sash lock according to claim 1 which includes in addition a boss on said one side of said arm between the ends thereof and engageable with said flange, a lateral projecting from the other side of said arm, and a leaf spring having one end fixed to said shoulder and having the other end bearing against said lateral for biasing said arm in one direction.

References Cited in the file of this patent

UNITED STATES PATENTS

223,250	Selden	Jan. 6, 1880
718,577	Patterson	Jan. 13, 1903
851,533	Letson	Apr. 23, 1907
886,108	Allen	Apr. 28, 1908
1,163,397	Ford	Dec. 7, 1915
1,187,479	Anderson	June 20, 1916
1,540,450	Wood	June 2, 1925