Oct. 5, 1926. 1,601,773

M. J. SASGEN

WINDOW LOCKING DEVICE

Filed May 26, 1924 4 Sheets-Sheet 1

Fig. 1.

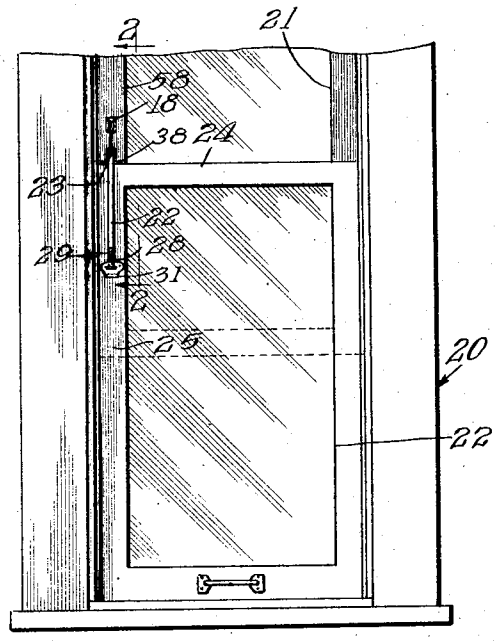


Fig. 6.

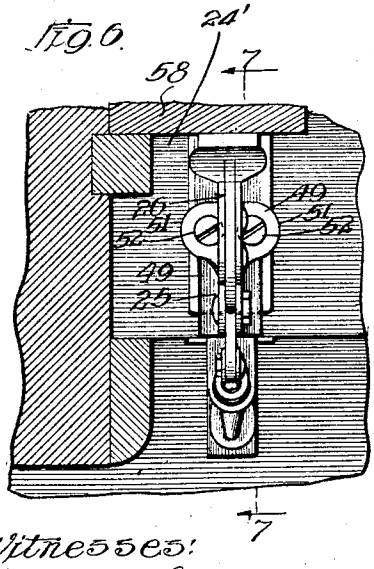


Fig. 7.

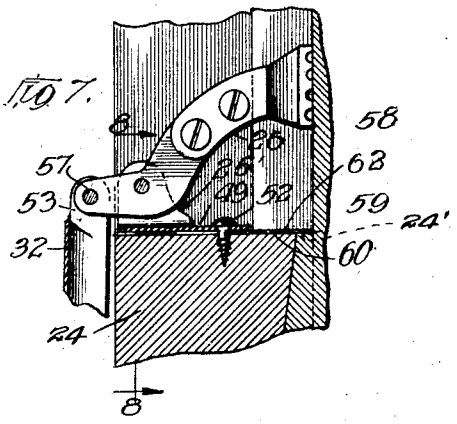
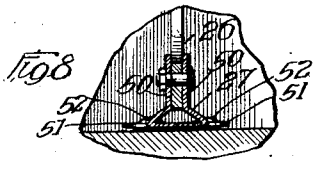


Fig. 8



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W. Kilroy

Inventor:
Michael J. Sasgen
By Edward Fay Wilson Atty.

Oct. 5, 1926. 1,601,773

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WINDOW LOCKING DEVICE

Filed May 26, 1924 4 Sheets-Sheet 2

Fig. 2.

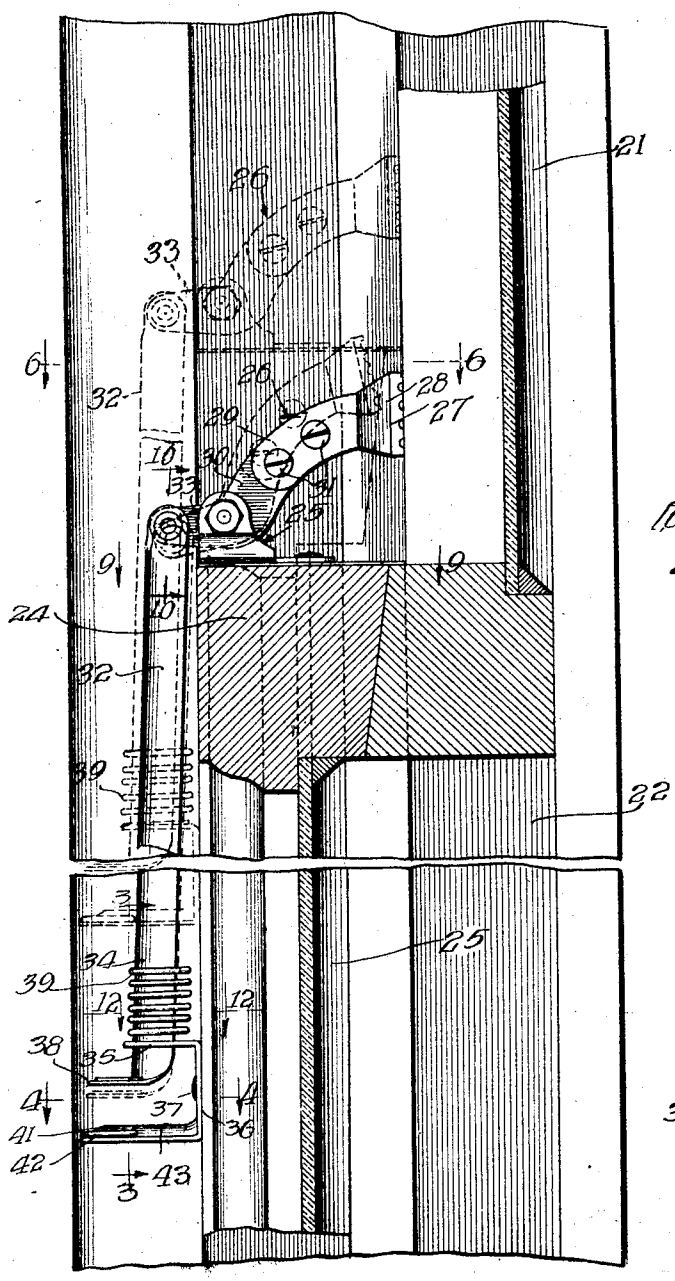


Fig. 3.

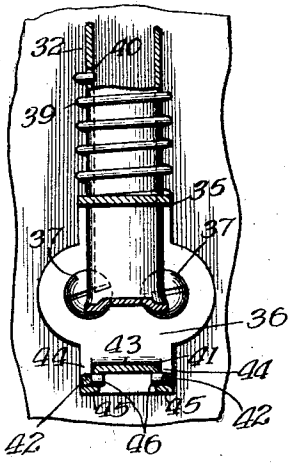


Fig. 4

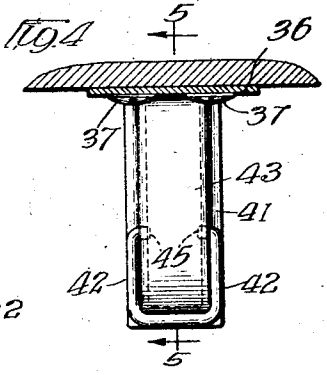
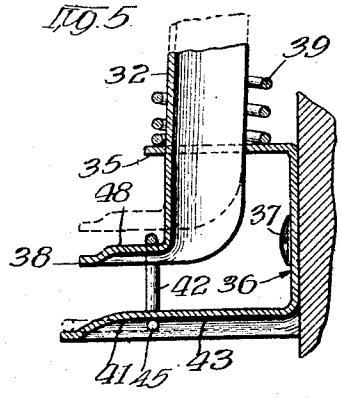


Fig. 5



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Oct. 5, 1926. 1,601,773

M. J. SASGEN

WINDOW LOCKING DEVICE

Filed May 26, 1924 4 Sheets-Sheet 3

Fig. 9.

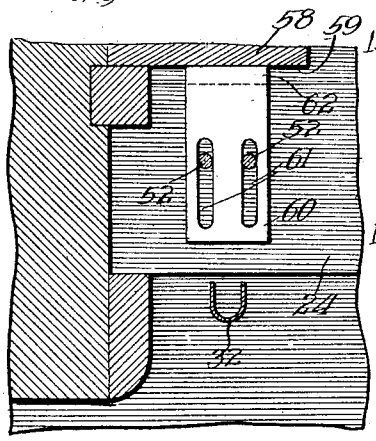


Fig. 13

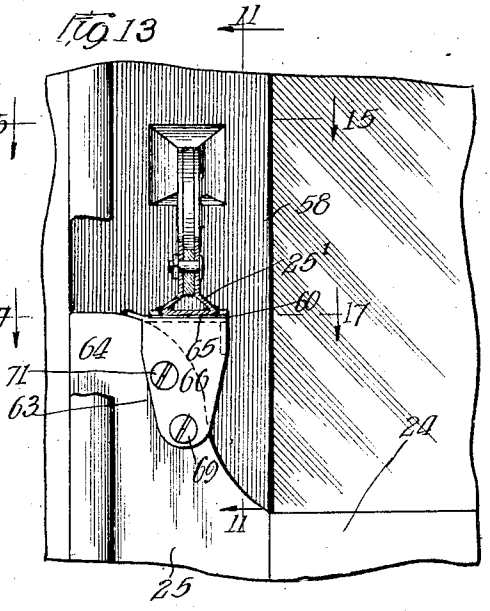


Fig. 10

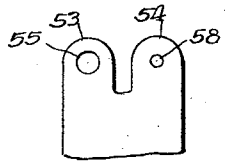


Fig. 14

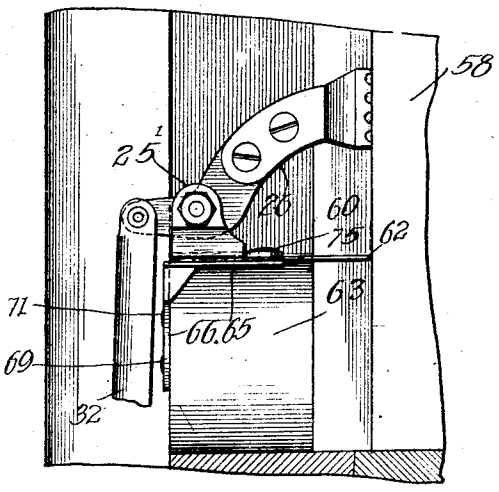


Fig. 11

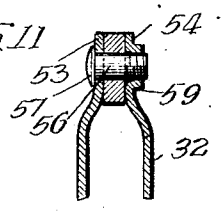
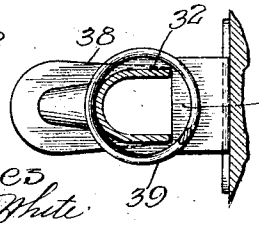


Fig. 12



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Oct. 5, 1926. 1,601,773

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WINDOW LOCKING DEVICE

Filed May 26, 1924 4 Sheets-Sheet 4

FIG. 15.

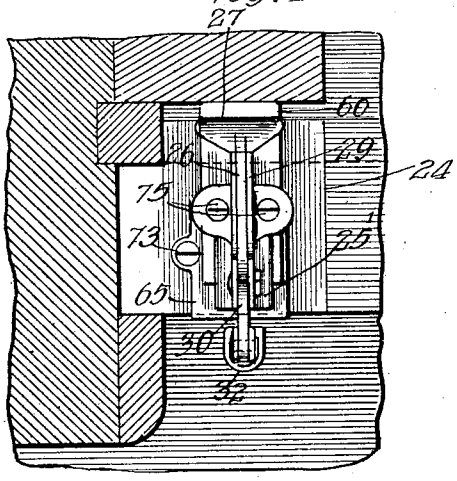


FIG. 17.

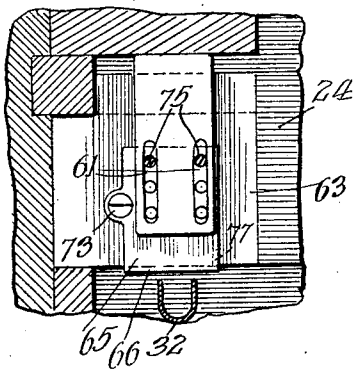


FIG. 18.

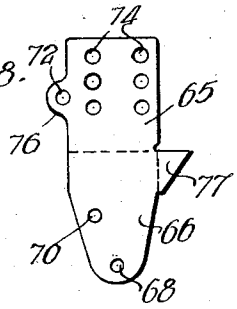


FIG. 16.

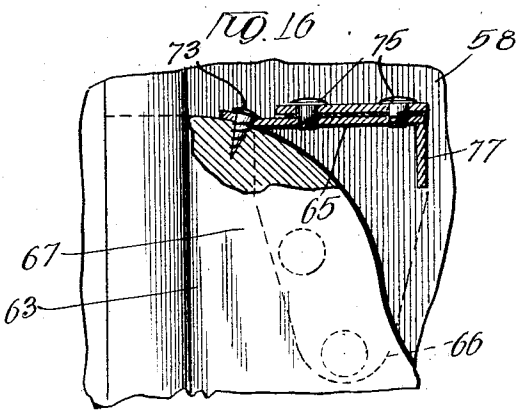


FIG. 19.

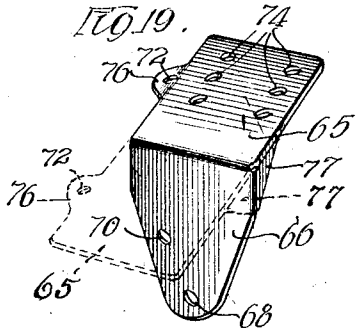
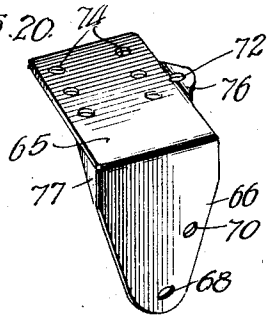


FIG. 20.



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Inventor:
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By Edward Fay Wilson Atty.

Patented Oct. 5, 1926. 1,601,773

UNITED STATES PATENT OFFICE.

MICHAEL J. SASGEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO GRAND SPECIALTIES COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

WINDOW-LOCKING DEVICE.

Application filed May 26, 1924. Serial No. 715,944.

My invention relates to improvements in devices for engaging two relatively movable members, such as two associated window sashes to prevent relative movement: in other words, my invention relates to such window locks particularly adapted to lock the two sashes in partly open condition and prevent their being opened further while permitting them to be readily closed or shut. Such locks are best placed upon the top bar of the lower sash in position to engage the upper sash, and frequently in such position the device is out of reach from the floor, particularly when the lower sash is raised, and it is a particular object of my invention to provide means arranged to permit the operation of the lock from a lower point. A further feature relates to simple means for yieldingly maintaining the lock in locking position and a simple hold back adapted to be arranged for holding the lock out of locking position, so that the window can be readily fully opened.

Further features of importance relate to the construction of parts out of thin sheet metal and the strengthening of such parts, and also the mounting and application of the device, to reduce and eliminate difficulties of application, and to reduce the possibility of the strut being surreptitiously lifted.

Still other advantages and improvements will become apparent from the specification taken in conjunction with the accompanying drawings forming part of this specification and in which:—

Figure 1, is a fragmentary elevation of a window equipped with one of my improved window locks;

Figure 2 is a fragmentary vertical section on the line 2—2 of Figure 1;

Figure 3, is an enlarged detail vertical section on the line 3—3 of Figure 2;

Figure 4, is a similar horizontal section on the line 4—4 of Figure 2;

Figure 5, is a fragmentary vertical section on the line 5—5 of Figure 4;

Figure 6, is a horizontal section on the line 6—6 of Figure 2, showing a top plan view of the lock;

Figure 7, is a fragmentary, detail, vertical, section on the line 7—7 of Figure 6;

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

Figure 9, is a fragmentary horizontal section on the line 9—9 of Figure 2;

Figure 10, is a fragmentary plan view of the upper end of the operating rod before it is formed up;

Figure 11, is an enlarged detail fragmentary section on the line 11—11 of Figure 2;

Figure 12, is an enlarged fragmentary horizontal section on the line 12—12 of Figure 2;

Figure 13, is a fragmentary elevation similar to Figure 1 and showing a locking device applied to a lower sash, having upper projecting parts on its top;

Figure 14, is a fragmentary vertical section on the line 11—11 of Figure 10;

Figure 15, is a plan section on the line 15—15 of Figure 13;

Figure 16 is a fragmentary vertical section substantially on the line 16—16 of Figure 15;

Figure 17, is a fragmentary horizontal section on the line 17—17 of Figure 13;

Figure 18, is a plan view of a blanked out bracket;

Figure 19, is a perspective view of one of the brackets formed as a left hand bracket; and

Figure 20, is a view similar to Figure 19, but showing the bracket formed up as a right hand bracket.

In said drawings, 20 illustrates an ordinary window having an upper sliding sash 21 and a lower sliding sash 22.

I provide a window lock 23 which is secured upon the top surface of the top bar 24 of the lower sash 22 and above one of the side bars 25 thereof. While I have shown the lock at the left side of the window, it can be placed at the right side as well. The lock comprises a strut 26 pivotally mounted at its lower end upon a bracket 25′ secured to the bar 24 of the lower sash. The strut is pivoted to swing from and toward the upper sash and is curved edgewise on a suitable radius, so that its free end 27 will lie practically flat against the face of the side bar of the upper sash. The free end 27 is covered by a rubber shoe 28 which is somewhat yielding and affords an excellent frictional grip of the upper bar and effectually prevents the upward sliding of the strut. Preferably the strut is made of two

pieces 29 and 30 connected by two screws 31 and provided with extra holes, so that the strut can be readily lengthened or shortened to accommodate windows having bars of different dimensions. It will be obvious that when the strut is in locking position, as shown in full lines, Figure 2, it will prevent the raising of the lower sash and likewise the lowering of the upper sash; in other words, prevent the two sashes moving towards each other. I have also indicated the lower sash as raised, in dotted lines, and the strut in locking position thereon, and it is obvious due to the inclination of the strut that the lower sash can be pulled down but not raised further. To raise the lower sash or lower the upper sash it is necessary to raise the strut with its free end free of the upper sash, as shown in dotted lines, Figure 2. When the strut is thus raised either sash can be freely moved up and down. For convenience in thus lifting the strut, particularly on relatively high sashes, I provide an elongated operating rod 32, preferably in the form of a light member formed up out of sheet metal into U-shape in cross-section to make it stiff and which extends down along the side bar 25. The upper end of the bar 22 is pivoted to the free end of a short arm 33 extending out horizontally from the pivoted end of the strut, whereby the strut is made in the form of a bell-crank. By pulling down on the operating rod the strut is swung up and freed from contact with the upper sash. The lower end 34 of the rod 32 is guided in the upper arm 35 of a U-shaped bracket 36 secured to the side bar 25 by two screws 37. The upper arm 35 is provided with a suitable guide opening for the lower end 34 of the bar 32, and the extreme lower end 38 of the bar 32 is flattened and bent out at right angles to form a finger hold for pulling the rod down. The rod is normally held at the upper limit of its movement with the strut in contact with the upper sash by a compression spring 39, having its upper end projected into a hole 40 in the bar and its lower end seated on the arm 35. The lower arm 41 of the bracket 36 projects out beneath the bent end 38 of the rod and has a bail 42 pivotally mounted thereon to swing up from its horizontal position, as shown in Figure 2, to an upright position, as shown in Figure 5. In this latter position it is adapted to engage over the bent end 38 of the rod 32, and it is of such a length that the rod has to be pulled down to free the strut from the upper sash before it can be engaged by the bail. When thus engaged the rod cannot rise to engage the strut with the upper sash. This hold-off is useful in holding the lock in inoperative position when it is desired to move the sashes up and down freely, as in cleaning the windows or opening them wide. When it is desired to set the lock again it is merely necessary to pull the rod down slightly and swing the bail 42 off of the end 38.

To pivotally mount the bail 42 on the arm 41, I preferably form the middle portion of the arm upwardly, as shown at 43, thus forming vertical side walls 44 in which I provide opposed openings 45 to receive the free ends 46 of the bail which have been bent inwardly and facing each other. In assembling the parts the ends of the bail are sprung into the holes 45 and the bail is normally supported in horizontal position by the side parts of the arm 41. The struck up center portion 43 of the arm 41 runs back into the back wall 47 of the bracket 36, and this distortion of the metal greatly stiffens the arm 41. In a similar manner the bent out end or foot 38 on the rod 32 has its central portion 48 formed up, and which formed up part merges into the adjacent wall of the rod 32, thereby greatly stiffening this finger piece and eliminating the tendency to bend and break. The bracket 27 upon which the strut 26 is pivotally mounted comprises a flat base portion 49 provided with two upstanding parallel ears 50 at the rear end of the base and between which the strut 26 is mounted. The base 49 is widened out at its forward end to provide two laterally extending ears 51 for receiving the fastening screws 52. The screws 52 can thus be arranged out from under the strut 26 in such position that they can be engaged by a screw-driver without the necessity of first removing the strut, the screw-driver readily passing down along side of the strut in the fastening operation. Likewise the base 47 of the bracket 36 is widened out to receive the fastening screws 37 and permit the convenient and ready securing of the bracket.

As mentioned hereinbefore, the rod 32 is preferably formed up out of sheet metal. It is first blanked out, then formed into a rod-like member, having a U-shaped cross-section, as best shown in Figures 9 and 14. The upper end of this member is provided with two parallel ears 53 and 54 spread apart to receive the arm 33 of the strut 26 between them. While the blank is still in flat condition, as shown in Figure 12, the ear 53 is perforated to provide a hole 55 large enough to receive the body 56 of a screw pivot 57 for connecting the rod to the arm. The other ear 54 is also provided with a hole 58 in position to be brought into alignment with the hole 55 when the rod is formed. This hole 58 is small enough so that the metal surrounding it can be formed outwardly, as shown at 59, Figure 13, and provide an opening of suitable diameter to be internally threaded to receive the

threaded end of the pivot screw 57. The rod 32 is formed up of quite thin sheet metal, and I have devised this novel manner of providing, in such thin metal, an opening of sufficient length to provide sufficient screw threads for engagement with the screw to make a practical and enduring connection.

As particularly disclosed in Figure 7, between the top bar 24 of the lower sash and the side bar of the upper top sash, against which the strut engages, there is frequently a space indicated at 24′ on Figures 6 and 7 which, when the lower sash is raised, might permit the upward projection of a thin instrument between the two sashes from the outside for the purpose of lifting the strut and thus permit the lower sash to be raised further. To prevent this surreptitious lifting of the strut, I provide a guard plate 60 arranged beneath the bottom plate 49 of the bracket 25′. As window bars are of different dimensions and it is desirable that the inner end of the bracket 25′ be flush with the inner face of the lower sash, for the proper setting and operation of the device, I provide the guard plate 60 with two elongated openings 61 extending longitudinally of the plate and in position to permit the placement of the screws 52 which secure the bracket 25′ to the sash. By this means, regardless of the relative dimensions of the window and the parts of the device, I can project the guarding end 62 of the plate 60 in close to the inner face of the side bar 58 of the upper sash in proper guarding position.

In Figures 13 to 20 inclusive, I have illustrated a bracket which I use when applying my device to a lower sash, which has curved projections 63 arising above the top bar 24 of the lower sash and in line with the side bars 25 of the lower sash. In order to apply my window lock to such conditions, I provide a bracket member 64, preferably made of sheet metal and formed to present a horizontal part 65, to receive the bracket 25′ formed with a downwardly extending part 66 which is adapted to lie flat against the inner face 67 of the window sash projection 63. The part 66 is provided with one substantially centrally arranged hole 68 adjacent to its lower end to receive a holding screw 69, and with a second hole 70 near one edge to receive a second holding screw 71. The horizontal part 65 is provided with a hole 72 at one edge to receive a holding screw 73, and this part is also provided with holes 74 which are preferably threaded to receive screws 75 for clamping the bracket 25′ upon the bracket 64. The horizontal base plate part 65 is fixed in relation to the sash by the front part 66 which contacts the inner face of the sash, and, in order to provide for sashes of different thicknesses, I provide a number of the pairs of screw holes 74 spaced longitudinally of the plate 65, so that the bracket 25′ can be secured to the lower sash at the proper distance from the adjacent face of the side bar of the upper sash to produce the proper locking action of the strut. I provide a small edge projection 76 to accommodate the screw hole 72, and this hole is adjacent to the same edge of the bracket as the hole 70 in the part 66. As best shown in Figure 16, the edge of the part 65 which contains the screw hole 72 is curved up slightly to match the curving of the top of the projection 63. The hole 70, being arranged near the left hand edge of the part 66 in a left hand bracket, is in position so that the screw 71 will be received in the bracket 63.

To stiffen up the base part 65 to properly sustain the locking strain without being bent down, I preferably provide a brace part 77 which is integral with the vertical part 66 and is adapted to be bent around to lie under and contact with the base part 65, as best shown in Figures 19 and 20.

In the manufacture of such devices the initial cost of tools and dies is an important matter and if this initial cost can be reduced it is of advantage. In applying my improved lock to different situations they must be capable of being placed on either the left hand, which is usually preferable or on the right hand. In order to place locks on sashes having the curved projections 63, the brackets 64 must be made both left hand and right hand. The bracket of my invention fulfills this requirement, for I am enabled by means of one blanking die to blank out the brackets and then to make either left or right hand formed up brackets from the same blanks.

In Figure 18 I have shown a bracket in flat blank form as it leaves the blanking die. In Figure 19 I have shown a formed up left hand bracket, and in Figure 20 a similar right hand bracket. If the base part 65 is formed over in one direction and the brace part 77 turned under it, one form of bracket is produced, such as the bracket shown in full lines, Figure 19, and if the base part 65 is turned over in the opposite direction and the brace part 77 turned under it, as shown in dotted lines, Figure 19, the right hand bracket, as shown in Figure 20, results. There is not an extra hole or an extra part, but starting with identical blanks the finished bracket is either left hand or right hand, depending upon its manner of formation. This feature greatly reduces the cost of manufacture of these parts.

It will now be clear that the strut of the window lock of my invention can readily be lifted to free the sashes for relative move-

ment, that the normal action of the lock is to prevent relative movement of the sashes toward each other, while leaving them free for window closing movement, and that the lock can readily be arranged and held out of locking condition when desired.

Further, that the device is so constructed and the parts so formed that they can be made by the usual manufacturing processes in large quantities and at relatively low cost. Also, that the strut is guarded against being lifted from the outside by a thin instrument inserted up between the sashes.

It should be understood that while the drawings illustrate one, the preferred, form of my invention, my invention is not to be limited on confined to the specific details of construction shown and described.

I claim:

1. A window lock, comprising a strut adapted to be pivotally mounted on a lower sash to swing over into locking engagement with the upper sash, a dependent rod for manually lifting the strut, and spring means yieldingly retaining the rod raised and the strut in locking position.

2. A window lock, comprising a strut adapted to be pivotally mounted on a lower sash to swing over into locking engagement with the upper sash, a dependent rod for manually lifting the strut, a manually operable strut lifting rod dependent therefrom, and a spring engaged with the rod and normally yieldingly holding the rod raised and the strut in locking position.

3. In a window lock of the kind described and including a pivoted locking strut, spring means yieldingly normally holding the strut in locking position, and means for manually setting and holding the strut in non-locking position.

4. In a window lock of the kind described, a strut pivotally mounted at one end, a yielding contact shoe on its free end, a dependent operating rod for lifting the strut out of locking position, means for yieldingly retaining the strut in locking position, and means for setting and holding the operating rod with the strut in non-locking position.

5. In a window lock, a strut adapted to be pivotally mounted on the top of a lower sash to swing over into locking contact with the upper sash, an operating rod dependent from the locking strut and adapted to be pulled down to lift the strut out of locking position, spring means for yieldingly retaining the strut in locking position, and hold off means for engagement with the operating rod to retain the same pulled down and the strut out of locking position.

6. In a window locking device of the kind described, an operating rod adapted to be pulled down to unlock the device, a spring for normally holding the rod at the upper limit of its movement, a lateral projection on the rod, a bail adapted for engagement over said projection to hold the rod pulled down, as and for the purpose specified.

7. In a window lock of the kind described, a dependent operating rod, a fixed guide for the lower end of the rod, the extreme lower end of the rod bent out to form a finger hold, a guide bracket for the lower end of the rod, a push spring engaging the rod and the bracket for normally holding the rod at the upper limit of its movement, a bail pivotally mounted on the bracket and adapted to be swung up over the bent out lower end of the rod to hold it pulled down against the action of the spring, as and for the purpose specified.

8. In a window lock, a locking lever pivoted to the lower sash and adapted to engage the upper sash, and a guard plate secured to the lower sash beneath the lever and adapted to project over the lower bar of the upper sash and substantially into contact with the side bar of the upper sash, as and for the purpose specified.

9. In a window lock, a locking strut pivoted to the lower sash and adapted to engage the upper sash, a guard plate adapted to be secured to the lower sash, together with the strut support, and adjustable independent of the strut support, from and toward the upper sash, as and for the purpose specified.

10. In a device of the kind described, an operating rod formed up out of sheet metal, one end formed with two parallel ears for connecting it to another part, one ear provided with an opening for receiving the body part of a screw pivot, the other ear provided with a smaller opening with a surrounding flange formed up around the opening and provided with an interior screw thread for receiving the threaded end of a screw pivot.

11. In a device of the kind described, a member made of thin sheet metal and having a part extending at substantially a right angle to the body thereof, the middle portion of said part being distorted out of its plane, and said distorted portion merging into the body part, as and for the purpose specified.

12. In a device of the kind described, a rod-like member formed of thin sheet metal formed into a U-shaped cross-section, the body part at one end extending beyond the sides and bent off at substantially a right angle to form a finger hold, the middle portion of the finger hold being humped up longitudinally, and said humped up formation merging into the body part of said member, as and for the purpose specified.

13. The improvements herein described, comprising a strut device adapted to be secured upon the top of a lower sash to engage the side bar of an upper sash, in combination with an angle bracket adapted to be secured to a curved projection of the

lower sash, and to provide a horizontal foundation for said device.

14. The improvements herein described, comprising a strut device adapted to be secured upon the top of a lower sash to engage the side bar of an upper sash, in combination with an angle bracket adapted to be secured to a curved projection of the lower sash, and to provide a horizontal foundation for said device, and a guard plate adapted to be secured between the strut device and said bracket for projection toward the upper sash, as and for the purpose specified.

15. The improvements herein described, comprising a strut device adapted to be secured upon the top of a lower sash to engage the side bar of an upper sash, in combination with an angle bracket adapted to be secured to a curved projection of the lower sash, and to provide horizontal foundation for said device, the angle bracket having a bent down part adapted to be secured to the inner face of the window sash projection, and said horizontal part provided with spaced apart holes for receiving the fasteners for securing the strut device thereon, and by means of which the strut device can be secured in different positions relatively to said angle bracket, as and for the purpose specified.

16. The improvements herein described, comprising a strut device adapted to be secured upon the top of a lower sash to engage the side bar of an upper sash, in combination with an angle bracket adapted to be secured to a curved projection of the lower sash, and to provide a horizontal foundation for said device, the angle bracket having a bent down part adapted to be secured to the inner face of the window sash projection, and a bendable projection on one edge of the bent down part adapted to be bent in beneath one edge of the horizontal part to assist in supporting it.

17. A flat sheet metal cutout blank for the production of either a left hand or a right hand bracket, the blank having a portion to produce a horizontal base part, a second portion for forming a dependent securing part and a third portion at one edge of one of the other parts adapted to be bent to form a brace between the two, the two first mentioned portions adapted to be bent in either direction to form an angle bracket and the third portion adapted to be bent to serve as a brace between the other two, as and for the purpose specified.

In testimony whereof, I have hereunto set my hand, this 3rd day of May, 1924.

MICHAEL J. SASGEN.