

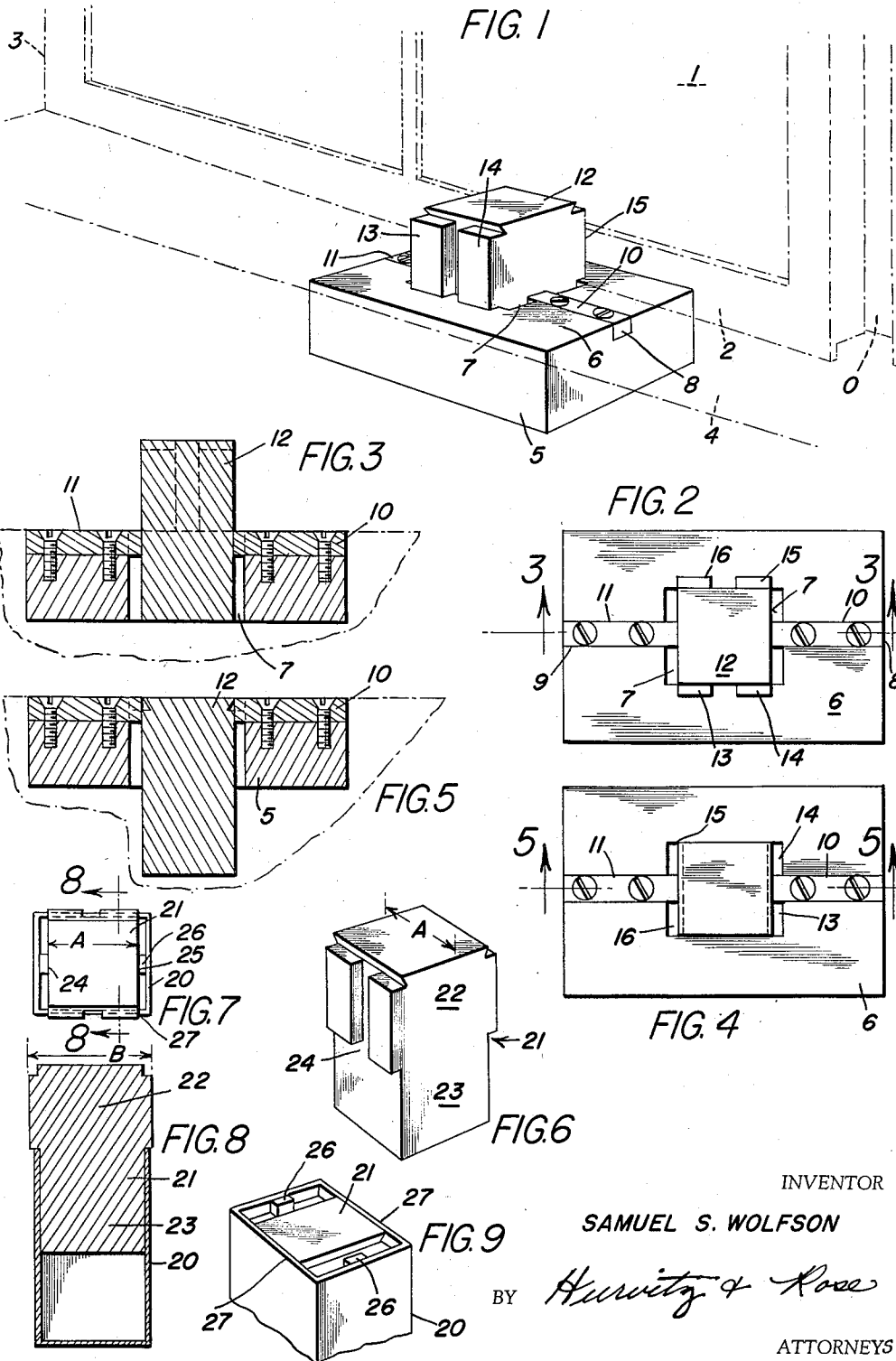
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WINDOW LOCK

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WINDOW LOCK

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4 Claims. (Cl. 292—1)

The present invention relates generally to window locks, and more particularly to window locks installed in the sill of a casement type window and arranged selectively to permit complete opening of the window, or only partial opening of the window.

Briefly describing the general concept of the invention, an aperture is provided in the sill of a casement type window, the aperture extending vertically downward. Within the aperture is inserted a metallic well structure having a vertically and downwardly extending well of rectangular transverse cross-section, which has a slight different dimension in the direction generally parallel with the plane of a casement window than it has in the direction extending substantially perpendicularly of the plane of the window. Within the well is inserted a bolt. The bolt may be inserted in (at least) two different orientations, taken about a vertical axis, these differing by 90°. In one of these orientations the bolt may extend entirely into the opening, its upper surface lying flush with the window sill, whereby the casement window may be opened to any desired extent. In the other orientation the bolt extends only partially within the well, that part which extends outside of the well providing a blocking element for preventing opening of the casement window beyond a small amount.

In a preferred embodiment of the invention, the bolt may have two different transverse dimensions and one or more vertically extending key-ways engage with one or more keys or tongues extending transversely inwardly of the well for a short distance. The distance between the ends of the key-ways may then equal the smaller transverse width of the bolt, permitting total insertion of one bolt orientation. In the totally inserted condition of the bolt, for which the casement window may be opened to any desired extent, the key-ways engage the keys and the outline of the bolt precisely fills the outline of the well. When the bolt is rotated 90°, the elements forming the key-ways engage the top surface of the well, preventing complete insertion of the bolt therein. However, since the transverse dimensions of the bolt in this position is equal to the distance between the ends of the keys or tongues, the bolt is rigid when so inserted, and cannot be readily displaced in any transverse direction.

It is, accordingly, a broad object of the present invention to provide a horizontal window lock which by means of simple manual manipulation permits either full opening of a casement window or opening to only a slight extent.

It is a further object of the invention to provide a lock for a casement window which permits partial opening thereof only, at will, and which is essentially burglar proof, preventing forcing of the casement window from externally thereof despite the fact that the casement window is partially open.

The above and still further features, objects and advantages of the present invention will become apparent upon consideration of the following detailed description of specific embodiments thereof, taken by reference to the accompanying drawings, wherein:

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Figure 1 is a view in perspective of a casement window lock according to the present invention, as installed in a window sill and as related to a casement window;

Figure 2 is a view in plane of the window lock of Figure 1;

Figure 3 is a view in section taken on the line 3—3 of Figure 2;

Figure 4 is a plane view of the window lock of Figure 1 shown as having a bolt position which is alternate to that shown in Figure 2;

Figure 5 is a view in transverse cross-section taken on the line 5—5 of Figure 4;

Figure 6 is a view in perspective of a bolt element according to the invention;

Figure 7 is a plane view of a modification of the structure of Figures 1 to 6;

Figure 8 is a view in cross-section taken on the line 8—8 of Figure 7; and

Figure 9 is a view in perspective of the upper portion of the casement window lock of Figures 7 and 8.

Referring now more specifically to the accompanying drawings, reference numeral 1 denotes a casement window, with a horizontal frame element which is identified by the reference numeral 2, and which has a pivot or hinge end 3. As shown in Figure 1 the casement window 1 is partially open, the opening being identified by the reference letter O. The window 1 is associated with a horizontal sill 4, having an aperture within which is mounted and secured a metallic block 5. The block 5 may be rectangular if desired, although other shapes may be employed, and may be made of a strong metal, although the principle of the invention does not require that any particular metal be used, and in fact permits the use of sufficiently strong plastics or other materials.

The block 5 has an upper surface 6 which is flush with the upper surface of the sill 4. Within the block 5 is provided a vertical well or aperture 7, which in plan view is rectangular, having a slightly greater dimension parallel to the plane of the window 1 than it does perpendicularly of the plane of the window 1. Particular dimensions which have been envisaged by me are one inch and one and a sixteenth inches. Nevertheless, I do not desire to be limited to any specific dimensions. Two horizontal aligned key-ways 8 and 9 are provided in the upper surface of the block 5, these extending substantially centrally of the block and in the direction generally parallel with the plane of the window 1. Within these slots or key-ways 8 and 9 are bolted keys 10 and 11, the latter projecting a small distance into the well 7, equally on both sides. While the well may have a depth of the order of 3/4", the keys may have a thickness of the order of 1/4", these dimensions being provided for example only and not intended to be limiting.

Located within the well 7 is a bolt 12 having a horizontal upper surface, and which extends perpendicularly of the longitudinal axis of the well 7, the latter coinciding with the longitudinal axis of the bolt 12. Secured to the bolt 12 on opposite sides thereof, or formed integral therewith if desired, are two pairs of metal bars 13, 14 and 15, 16, the bars 13 and 14 being spaced to form a key-way for the key 11 and the bars 15 and 16 being spaced to form a key-way for the key 10, in one orientation of the bolt 12.

Bars 13, 14 and 15, 16 extend approximately half-way along the length of the bolt 12, in a direction parallel to the longitudinal axis thereof, for a purpose which will become apparent as the description proceeds. The transverse dimension of the bolt 12 at the walls which are not provided with key-forming bars, such as 13, 14 and 15, 16 is precisely equal to the distance between the ends of the keys 10 and 11. The transverse distance between two parallel ones of the key-way forming bars, such as

14 and 15, is precisely equal to the width of the well 7 in a direction parallel to the plane of the window 1, the keys 10 and 11 in such case fitting snugly the key-ways formed by the several bars 13, 14 and 15, 16.

In operation the bolt 12 may be inserted into the well 7 in the position shown in Figure 1 of the accompanying drawings, whereupon the under ends of the bars 13, 14 and 15, 16 will rest upon the surface 6 of the block 5, preventing full insertion of the bolt 12 within the well 7. In such case the keys 10 and 11 snugly bear against those vertical walls of the bolt 12 which extend perpendicular to the plane of the window 1, and prevent any motion of the bolt 12 except motion outwardly in a vertical plane. Accordingly, in this position the window cannot be opened beyond the point at which the lower element 2 of the window bears against the bolt 12.

When the bolt 12 is rotated 90° about a vertical axis with respect to the position shown in Figure 1 of the accompanying drawings, the key-way formed by the elements 13, 14 and the key-way formed by the elements 15, 16, are movable on the keys 10 and 11, respectively, permitting the movement of the bolt 12 completely into the well 7, and thereby providing clearance for horizontal frame element 2 of the window 1, whereby the window 1 may be opened to any desired extent.

Referring now more particularly to Figures 7 to 9 of the accompanying drawings, I have illustrated a modification of the present invention in which the well of the species of the invention illustrated in Figures 1 to 6, inclusive is formed by means of a tubing of rectangular cross-section 20 which is relatively thin walled. The well 20 may be inserted vertically within a sill such as 4 of Figure 1. A bolt 21 is provided having a rectangular cross-section. One transverse dimension A of bolt 21 is uniform and equal to the smaller transverse dimension of well 20. The other transverse dimension is B non-uniform, being greater at the upper portion 22 and smaller at the under portion 23.

The under portion 23 fits snugly the narrower width of well 20, but the width of the upper portion exceeds the narrower width of the well 20. In the upper walls of the bolt 21 is provided two parallel vertical key-ways 24, 25. These snugly engage parallel vertical keys 26 secured to the inner walls of the well 20.

The bolt 21 may accordingly, be completely inserted in well 20 in one orientation, wherein the key-ways 24, 25 engage the keys 26.

In the alternative orientation, involving rotation by 90° about a vertical axis, the upper part 22 of the bolt overlaps the edges 27 of well 20, so that insertion is incomplete. In this orientation, nevertheless the keys 26 prevent lateral or transverse motion of the bolt 21 within the well 20.

While I have described and illustrated one specific embodiment of my invention, it will be clear that variations

of the details of construction which are specifically illustrated and described may be resorted to without departing from the true spirit and scope of the invention as defined in the appended claims.

What I claim is:

1. A window lock for insertion in a window sill of a casement type window, said lock including a rectangular well extending into said sill, said rectangular well having two different transverse dimensions, a bolt insertable into said well in either of two orientations only about a vertical axis, and completely into said well in one of said orientations, and means for preventing complete insertion of said bolt into said well for the other of said orientations.

2. The combination according to claim 1, wherein said bolt includes at least one vertical key-way, defined by a pair of parallel bars, and wherein said well includes at least one key arranged to engage said key-way in said one orientation, under ends of said bars engaging an element of said well in said other of said orientations, to prevent complete insertion of said bolt into said well.

3. The combination according to claim 1, wherein said well includes at least one key extending into said well in a transverse direction, said bolt having transverse dimension in said one orientation relative to said well arranged to permit complete and snug insertion of said bolt between said key and that wall of said well which is opposite said key.

4. A window lock for insertion in a window sill comprising a block extending into said sill and having a rectangular well, said rectangular well having a larger and a smaller transverse dimension, said block including a key extending into said well in the direction of the larger dimension, the dimension between the innermost surface of the key and the nearest opposed surface of the body being approximately equal to said smaller transverse dimension, a substantially square bolt having transverse dimensions approximately equal to said smaller transverse dimension of said well, said bolt having a pair of spaced bars defining a key-way for said key, said bars being perpendicular to said transverse dimensions of said bolt and terminating remote from one end of said bolt.

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