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ASSEMBLY FOR HOLDING A WINDOW IN AN
OPEN POSITION

The present invention relates to an assembly for
5 holding a pivoted window or a pivoted sash in an open
position.

An assembly for holding a horizontally pivoted
sash window locked in an open position is known which
comprises an arm stay pivotably connected at one end
10 to a lower window frame member and engageable at the
other end with a lower sash frame member for serving
the above purpose. The arm stay rests on the lower
window frame member when not in use or when the sash is
closed.

15 However in such horizontally pivoted window
which pivots outwardly to open, it is difficult to
mount the arm stay on the lower window frame member,
since various other components are attached thereon.

It is believed possible by means of the invention to
20 provide an assembly for securely holding a horizontally pivoted
window in an open position.

It is also believed possible by means of the invention to
provide an assembly, for holding a pivoted sash in an open
position, which has an arm stay that can be rested on a
25 vertical window frame member when the window is closed.

According to the invention there is provided an assembly
for holding a sash locked in an open position, the sash including
a sash frame having upper and lower frame members

and a pair of vertical frame members and being pivotably supported on a window frame having upper, lower and a pair of vertical frame members, said assembly comprising:

(a) an arm stay; ;

5 (b) an arm support adapted to be mounted on one of the vertical window frame members for supporting one end of the arm stay in such a manner that the arm stay can be pivoted, not only vertically in a direction substantially parallel to said vertical window frame member, but also horizontally in a
10 direction parallel to the lower window frame member, and also that the arm stay can be vertically pivotted toward and away from the lower window frame member within the plane of the sash;

(c) an arm rest adapted to be mounted on said one vertical
15 window frame in vertically spaced relation to said arm support for releasably receiving the other end of the arm stay; ; and

(d) an arm catch adapted to be mounted on the lower sash frame member and engageable with the other end of the arm stay for holding the sash locked in an open position.

20 The invention will be described by way of example with reference to the accompanying drawings, wherein:-

Figure 1 is a schematic front elevational view

of a sash supported by a window frame;

Figure 2 is an elevational view, partly in cross section, of the sash in a closed position, showing the sash-holding assembly according to the invention;

5 Figure 3 is a horizontal cross sectional view of the sash held in an open position;

Figure 4, appearing with Figure 1, is a cross sectional view taken along line IV-IV of Figure 2;

Figure 5 is an exploded view of the holding
10 assembly; and

Figures 6 and 7, appearing with Figure 1, show modifications of the arm support.

Figure 1 is a schematic front elevational view of a horizontally pivoted window having a rectangular
15 sash B supported by a window frame A. The window frame A includes a pair of upper and lower window frame members 11, 12 and a pair of vertical window frame members 13, 14, while the sash B includes a pair of upper and lower sash frame members 15, 16, a pair of
20 vertical sash frame members 17, 18, and a window pane P.

The sash B is horizontally pivotably mounted on one of the vertical window frame member 14 in such a manner that it can move outwardly or exteriorly to open
25 and inwardly or interiorly to close.

Figure 2 shows the sash B in a closed position, and Figure 3 is a horizontal cross sectional view of

the sash B in an open position. As better shown in Figure 3, each of the vertical window frame members 13, 14 is of a substantially I-shaped horizontal cross section and includes a pair of parallel spaced interior and exterior walls 13a, 13b interconnected by a connecting wall 13c. An arm support 20 is secured to the connecting wall 13c (Figure 2) adjacent to a lower end thereof, and an arm rest 30 is also secured to the connecting wall 13c at a vertically intermediate portion thereof.

The arm support 20, as shown in Figure 5, includes a substantially L-shaped bracket 23 having a vertical wall 21 and a horizontal wall 22 extending integrally from the vertical wall 21 away from the vertical window frame member 13. The vertical wall 21 has a small-diameter cylindrical projection 24 (hereinafter referred to as a first projection) extending perpendicularly therefrom in parallel relation to the horizontal wall 22, while the horizontal wall 22 has a relatively large-diameter cylindrical projection 25 (hereinafter referred to as a second projection) extending perpendicularly upwardly therefrom. The first and second projections 24, 25 have distal ends perpendicularly directed toward each other into mutual tangential contact in such a way that they have axes extending in the same vertical plane. The vertical wall 21 is adapted to be connected to the

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connecting wall 13c of the vertical sash frame member 13 by means of a pair of screws 26, 26.

5 The arm rest 30, as shown in Figures 4 and 5, includes a base plate 31 having an integral bent-back portion 32 and a leaf spring 34 of a substantially doglegged shape disposed between the base plate 31 and the bent-back portion 32. The arm rest 30 is adapted to be attached at the base plate 31 to the connecting wall 13c by means of a pair of screws 33, 33.

10 An elongate arm stay 50, as shown in Figure 5, includes a pair of first and second circular holes 51, 52 formed adjacent to opposite ends thereof, the first hole 51 having a diameter that is substantially the same as that of the second projection 25 of the arm support 20. The arm 50 thus constructed is pivotably supported by the arm support 20 as shown in Figures 2 and 3. In Figure 2, the first hole 51 of the arm 50 is loosely engaged with the first projection 24, so that the arm stay 50 can pivot around the projection 24
15 vertically toward and away from the horizontal wall 22 of the bracket 23 within the plane of the sash B and it can also pivot around the axis of the projection 24 toward the exterior and back. In Figure 3, the first hole 51 is relatively tightly engaged with the second
20 projection 25, so that the arm stay 50 can pivot only horizontally around the axis of the projection 25.

The assembly further includes an arm catch 40

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adapted to be disposed on the lower sash frame member 16 and includes an L-shaped bracket 43 having a vertical wall 41 and a horizontal wall 42 extending integrally from the vertical wall 41 away from the lower sash frame member 16. The horizontal wall 42 has a cylindrical locking projection 44 extending upwardly therefrom and interfittingly engageable with the second hole 52 of the arm stay 50 when the sash is opened. The locking projection 44 has substantially the same diameter as the second hole 52. The arm catch 40 is adapted to be secured at the vertical wall 41 to an interior wall 16a of the lower sash frame member 16 by means of a pair of screws 45, 45.

To hold the sash B locked in an open position, the arm stay 50 is slightly pivoted interiorly (rightwardly in Figure 2) around the axis of the first projection 24 so as to become disengaged from the arm rest 31 against the friction provided by the resilient force of the leaf spring 34 and is then pivoted back exteriorly to a substantially upright position. Subsequently, the arm stay 50 is angularly moved downwardly toward the lower sash frame member 16 until the first hole 51 is brought into interfitting engagement with the second projection 25, the arm stay 50 being thus brought to a horizontal flat position, in which the arm stay 50 overlies the lower window frame member 12 along the full length of

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the arm stay 50. Finally, the arm stay 50 is horizontally pivoted toward the exterior (leftwardly in Figure 2) around the axis of the second projection 25, and then the second hole 52 is brought into interfitting engagement with the locking projection 44 on the arm catch 40, the sash B being thus securely held in an open position.

To return the arm stay 50 to the arm rest 30 from the above mentioned horizontal flat position, the arm stay 50 is pivoted upwardly toward the vertical sash frame member 13 until the first hole 51 is disengaged from the second projection 25 and has loose engagement with the first projection 24. Subsequently, the arm stay 50 is slightly pivoted interiorly and forced at the distal end between the leaf spring 34 and the bent-back portion 32 of the base plate 31.

Figures 6 and 7 show modifications 20', 20" of the arm support 20.

The arm support 20' shown in Figure 6 is similar in structure as the arm support 20 except that it includes a plate 28 secured to its vertical wall 21' and having a downwardly directed hook 27.

The arm support 20" shown in Figure 7 is similar in structure as the arm support 20' in Figure 6, but is different in that its vertical plate 21" is recessed so as to form a downwardly directed hook 27' that is integral with the plate 21". The hooks 27, 27' project

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perpendicularly toward the respective projections 25 on
the horizontal walls 22 so closely that the arm 50
alternately engaging the hook 27, 27' and the
projection 25 can not be accidentally removed from the
5 support 20', 20". The hooks 27, 27' of the supports
20', 20" serve the same function as the first
projection 24 of the support 20 and have a maximum
width smaller than the diameter of the projections 25.

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CLAIMS:-

1. An assembly for holding a sash locked in an open position, the sash including a sash frame having upper, lower and a pair of vertical frame members and being pivotably supported on a window frame having upper and lower frame members and a pair of vertical frame members, said assembly comprising:

(a) an arm stay;

(b) an arm support adapted to be mounted on one of the vertical window frame members for supporting one end of the arm stay in such a manner that the arm stay can be pivoted, not only vertically in a direction substantially parallel to said vertical window frame member, but also horizontally in a direction parallel to the lower window frame member, and also that the arm stay can be vertically pivotted toward and away from the lower window frame member within the plane of the sash;

(c) an arm rest adapted to be mounted on said one vertical window frame in vertically spaced relation to said arm support for releasably receiving the other end of the arm stay ; and

(d) an arm catch adapted to be mounted on the lower sash frame member and engageable with the other end of the arm stay for holding the sash locked in an open position.

2. An assembly according to claim 1, said arm stay having a pair of first and second holes disposed adjacent to opposite ends thereof, and selectably receptive of complementary structures on said arm support and on said arm catch, respectively.



3. An assembly according to claim 1 or 2, said arm support including a bracket having a pair of vertical and horizontal walls, each of said walls having a projection, such two projections being directed perpendicularly toward each other into substantially tangential contact at their distal ends, said projections having such a size as to allow interfitting engagement of each with a hole in the arm stay, one of said projections being smaller in size than the other projection.

4. An assembly according to claim 1, 2 or 3, said arm rest including a base plate having a bent-back portion extending integrally from said plate.

5. An assembly according to claim 4, said arm rest including spring means disposed between said base plate and said bent-back portion for resiliently holding the arm stay,

6. An assembly according to any preceding claim, said arm catch including a bracket having a pair of vertical and horizontal walls, said horizontal wall having an upwardly directed projection interfittingly engageable with a hole in said arm stay when the sash is open.

7. An assembly according to any preceding claim, said arm support including a bracket having a pair of vertical and horizontal walls, said horizontal wall having an upwardly directed cylindrical projection, said vertical wall having a downwardly direction hook, said hook extending perpendicularly toward said projection so closely that said arm stay engaging said hook and said projection alternately cannot be



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removed from said arm support, said hook having a maximum width smaller than the diameter of said projection.

8. An assembly according to claim 7, including a plate secured to said vertical wall, said hook being integral therewith.

9. An assembly according to claim 7, said hook being integral with said vertical wall and being defined by recessing in said vertical wall.

10. An assembly substantially as described with reference to and as illustrated in Figures 1 to 5 of the accompanying drawings.

11. An assembly substantially as described with reference to and as illustrated in Figures 1 to 5 modified as in Figure 6 of the accompanying drawings.

12. An assembly substantially as described with reference to and as illustrated in Figures 1 to 5 modified as in Figure 7 of the accompanying drawings.
