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[54] STORM SASH HANDLER

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[52] **U.S. Cl.** .....**214/1 R,** 294/74

[51] **Int. Cl.** **B66f 9/00**

[58] **Field of Search** .....214/1 R, 1 H, 1 SW; 52/122, 52/127, 741, 749; 49/57, 61, 67, 394; 294/74

[56] **References Cited**

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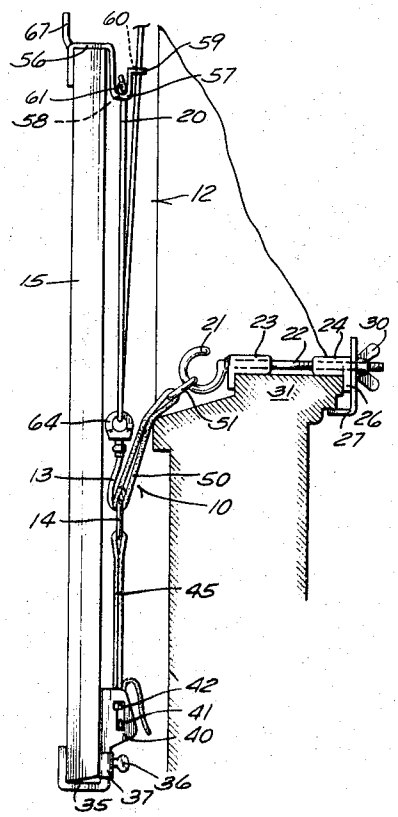
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Assistant Examiner—Frank E. Werner
Attorney—Cyril M. Hajewski

[57] **ABSTRACT**

A harness formed of straps and accessories is adapted to be attached to storm sash. The harness is hooked to a bracket mounted on the window sill to support the storm sash after the operator has removed it from the window frame or preparatory to installing it in the window frame. In addition, a cable arrangement may be coupled to the harness for raising the storm sash to an upper level, and for removing a storm sash from a window and lowering it to another level.

7 Claims, 4 Drawing Figures



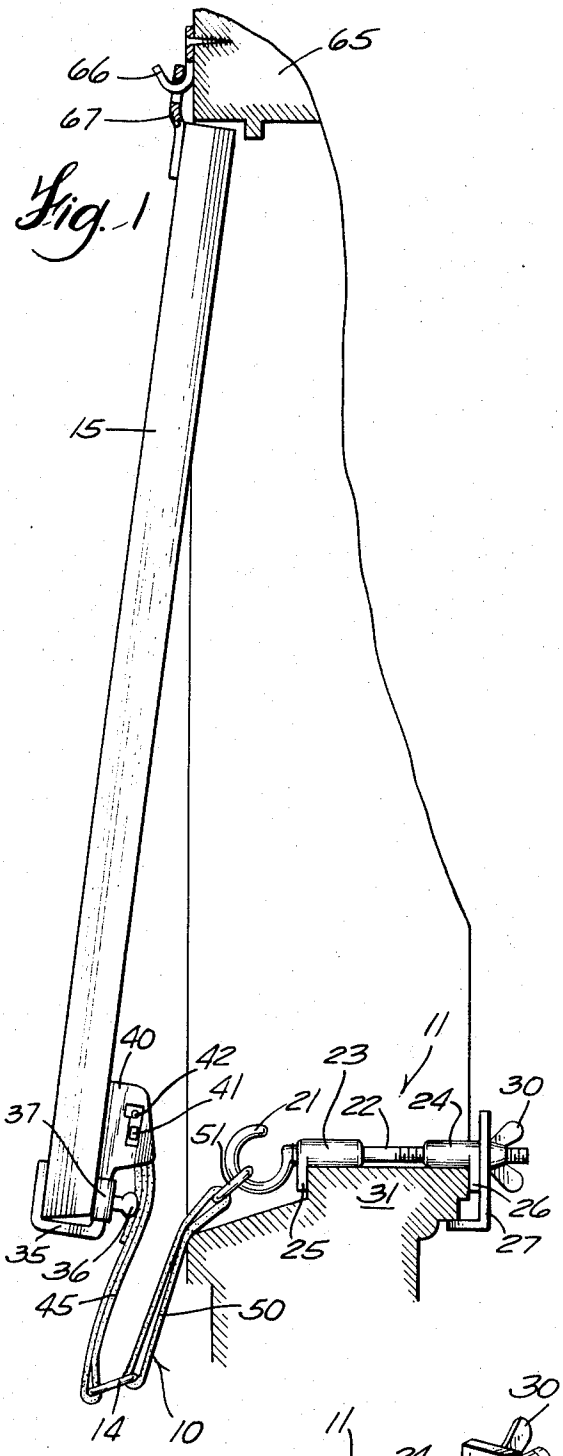


Fig. 1

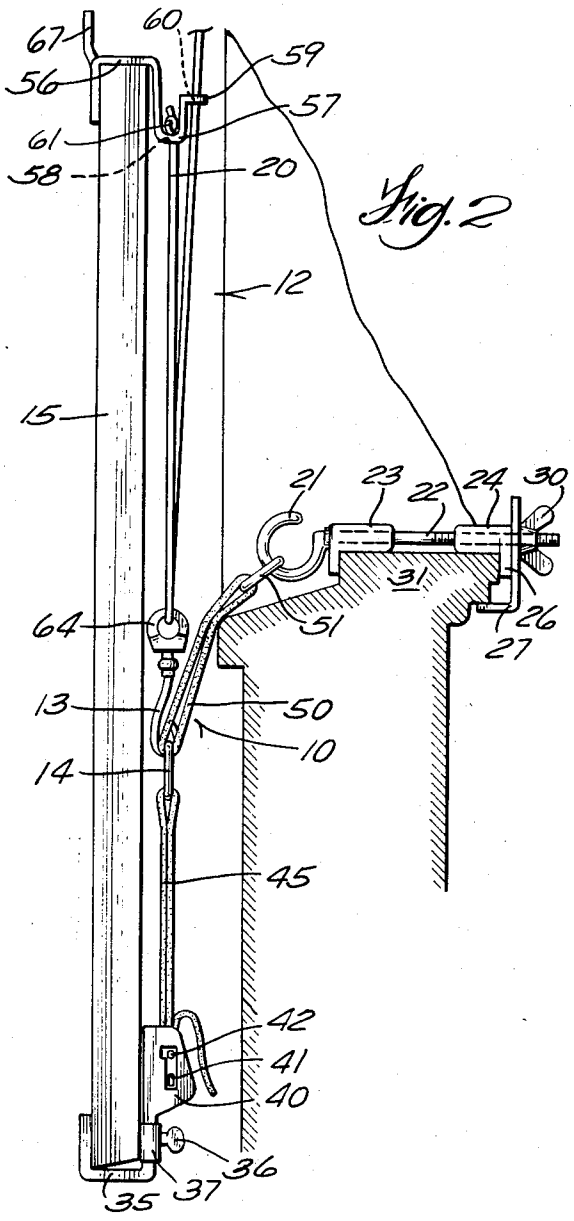


Fig. 2

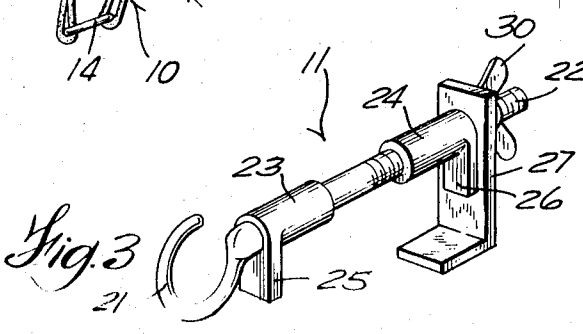


Fig. 3

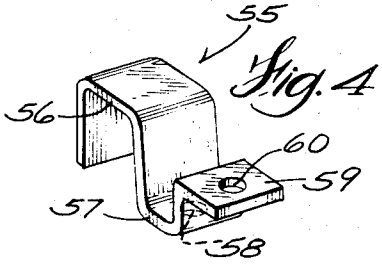


Fig. 4

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STORM SASH HANDLER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to the manual handling of storm sash, and particularly to facilitating the installation and removal of storm sash from upper floor windows while manipulating the storm sash from the interior of the building.

2. Description of the Prior Art

Many residences as well as commercial buildings are equipped with removable storm sash requiring that the storm sash be installed to provide added protection during the cold seasons of the year, and are removed to provide adequate ventilation during the warm seasons of the year. It has been the practice to remove such sash from the windows of upper floors by removing the sash from the window and either bringing it into the building through the window opening for transfer to the storage area or by manually carrying the sash down a ladder to the ground level.

SUMMARY OF THE INVENTION

The present invention is directed to a storm sash handler for facilitating this operation by enabling the sash to be lowered to the ground level or raised to the window level by means of a cable that is coupled to a harness secured to the storm sash. The apparatus of the present invention also supports the storm sash at the window level to assist the operator in either installing the sash in the window frame or removing it therefrom.

In order to provide support for the storm sash at the window level, a bracket is clamped to the window sill and includes a hook. A harness is attachable to the sash and this harness may be hooked to the sill bracket to support the sash after it has been removed from the window frame to enable the operator to make preparations for lowering the sash to the ground level. In like manner, the harness may be hooked to the sill bracket for supporting the sash when it has been raised from the ground to enable the operator to prepare the sash for mounting it in the window frame.

BRIEF DESCRIPTION OF THE DRAWING

The foregoing and other objects of the invention, which will become more fully apparent from the following detailed description, may be achieved by means of the apparatus described in connection with the accompanying drawings in which:

FIG. 1 is a view in side elevation illustrating the window sill bracket clamped to a sill and the lower portion of the sash harness attached to the sash and hooked to the sill bracket;

FIG. 2 is a view in side elevation illustrating the sash shown in FIG. 1 disengaged from the window frame and the upper portion of the harness being attached to the sash;

FIG. 3 is a detail perspective view depicting the window sill bracket shown assembled to the window sill in FIGS. 1 and 2; and

FIG. 4 is a detail perspective view showing the upper clamp of the storm sash harness.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference is now made more particularly to the drawings and specifically to FIG. 1 thereof which illustrates a lower portion **10** of a harness having one end attached to the bottom of a sash **15** and its other end hooked to a window sill bracket generally identified by the reference numeral **11**. The purpose for securing the lower portion **10** of the harness in like manner illustrated in FIG. 1 is to enable the harness to cooperate with the window sill bracket **11** for supporting the sash **15** at the window level after the storm sash **15** has been removed from its window frame mounting in the manner illustrated in FIG. 2.

While the lower portion **10** of the harness is supporting the sash in the position shown in FIG. 2, the upper portion **12** of the harness is attached to the upper edge of the storm sash **15** and is also coupled to the lower portion **10** of the harness by engaging a hook **13** with a ring **14**, the latter being a part of the lower portion **10** of the harness. The entire storm sash is then lowered to the ground level by uncoupling the lower portion **10** of the harness from the sill bracket **11** and lowering the storm sash **15** to ground level by means of a cable **20**.

The window sill bracket **11** is especially adapted fit on different types of window sills, and comprises a hook **21** which is fastened to the end of a stud **22**. A pair of sleeves **23** and **24** are slidably disposed on the stud **22**. The sleeve **23** is provided with a depending dog **25** while an identical depending dog **26** is provided on the sleeve **24**. An L shaped bracket **27** is likewise slidably supported by the stud **22** and a wing nut **30** is in engagement with the threaded end of the stud **22**.

The wing nut **30** retains the sleeves **23** and **24** as well as the L shaped bracket **27** on the stud **22**. By threading the wing nut **30** onto the stud **22**, the sleeve **24** and L shaped bracket **27** are forced toward the sleeve **23** and the hook **21**. This is taken advantage of to clamp the window sill bracket **11** onto the sill of a window in the manner illustrated in FIG. 1. Thus, the depending dog **25** of the sleeve **23** is abutted against a vertical outer edge of a window sill **31**. The sleeve **24** faces in the opposite direction, and its depending dog **26** is abutted against the opposite vertical edge of the window sill **31**. The L shaped bracket **27** abuts the end of the sleeve **24** and its horizontal leg catches a horizontal bottom surface of the window sill **31**. With the bracket **11** thus assembled to the window sill **31**, the wing nut **30** is threaded onto the stud **22** to tighten the bracket onto the window sill. Tightening of the wing nut **30** causes the window sill to be tightly clamped between the dogs **25** and **26** and the horizontal leg of the L shaped bracket **27** catches the horizontal under surface of the window sill to prevent any upward movement. With this arrangement, the bracket **11** can be attached to various types of window sills in a matter of moments.

The lower portion **10** of the harness includes a lower clamp **35** which is secured to the bottom edge of the storm sash **15** by a thumb screw **36**. The end of the thumb screw **36** abuts against a slide **37** on the bracket **35** so that the flat surface of the slide **37** bears against the surface of the storm sash **15** to prevent marring its finish.

The bracket **35** includes a pair of upwardly extending plates **40** having a slot **41** for receiving a pair of up-

wardly extending plates 40 having a slot 41 for receiving a pair of pins 42 which are attached to the two respective ends of a strap 45. The strap 45 is looped about the ring 14 with its two ends being secured to the bracket 35 by means of its pins 42 being disposed within the slots 41 of the two plates 40.

A second strap 50 is looped about the ring 14 and the strap 50 is also looped about a second ring 51. The strap 50 forms a continuous loop which is in engagement with the two rings 14 and 51.

The upper portion 12 of the harness includes an upper clamp 55 which is shown assembled to the storm sash 15 in FIG. 2 and is also shown in detail in FIG. 4. The clamp 55 provides an inverted U shaped portion 56 that slides over the top edge of the storm sash 15 as shown in FIG. 2. The clamp 55 also includes a smaller U shaped portion 57 which has a hole 58 in the bottom of the U for receiving the end of the cable 20. A horizontal ledge 59 extends outwardly from the top edge of the U shaped portion 57 and is provided with a hole 60 for slidably receiving the cable 20.

The cable 20 is threaded upwardly through the hole 58 in the bracket 55 and the end of the cable 20 is knotted to form a knot 61 which is too large to pass through the hole 58. This serves to attach the cable 20 to the bracket 55. As clearly shown in FIG. 2, the cable 20 then extends downwardly and passes through an eye 64 which is attached to the upper end of the hook 13. From the eye 64, the cable 20 extends upwardly and is threaded through the hole 60 in the bracket 55. The portion of the cable above the horizontal ledge 59 is manipulated by the operator in raising and lowering the storm sash 15.

In FIG. 1, the storm sash 15 is illustrated being supported on a window frame 65 by means of a conventional hook 66 which is secured to the frame 65 by means of screws. A bracket 67 mounted on the top of the storm sash 15 is provided with a suitable opening for passing over the hook 66 to retain the storm sash 15 in position. Two brackets 67 are provided for each of the storm sash 15 for engagement with two complimentary hooks 66 mounted on the window frame 65. It should also be noted that the hooks 66 support the storm sash 15 for limited pivotal movement toward and away from the window sill 31.

In operation, if it is desired to remove a storm sash 15 from the window frame 65 and lower the sash 15 to ground level, the sash 15 is first pivoted to move its bottom end outwardly, away from the window sill 31. The lower clamp 35 is then assembled to the lower edge of the storm sash 15 and is secured thereto by tightening the thumb screw 36. The straps 45 and 50, as previously described, are attached to the lower clamp 35 and the ring 51 is then passed over the hook 21 of the window sill bracket 11. The lower portion of the harness 10 is now assembled for supporting the storm sash 15, and the latter is then lifted off of the hooks 66 to free the sash from the window frame 65.

The storm sash is lowered to the position illustrated in FIG. 2 so that it is supported by the window sill 55. As clearly shown in FIG. 2, the cable 20 then extends downwardly and passes through an eye 64 which is attached to the upper end of the hook 13. From the eye 64, the cable 20 extends upwardly and is threaded through the hole 60 in the bracket 55. The portion of the cable above the horizontal ledge 59 is manipulated by the operator in raising and lowering the storm sash 15.

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The storm sash is lowered to the position illustrated in FIG. 2 so that it is supported by the window sill bracket 11 and the lower portion 10 of the harness. This renders the upper edge of the storm sash 15 accessible to the operator and he merely slides the upper clamp 56 over the top edge of the storm sash 15. The operator then grasps the free end of the cable 20, above the upper clamp 55, and draws it taut so that the upper clamp 55 will be securely retained on the upper edge of the storm sash 15. He then lifts the storm sash 15 slightly to loosen the lower portion of the harness 10 so that the ring 51 may be disengaged from the hook 21. The storm sash 15 is now free to be lowered to ground level and the operator accomplishes this by gradually releasing the cable 20 to cause the storm sash 15 to be lowered. For most efficient operation, an assistant will be at the ground level to release the harness from the storm sash 15 so that the operator at the window level can raise the harness for movement to another window where the operation may be repeated.

In order to lift a storm sash 15 from ground level and install it in the window frame 65, the above described operation is reversed. The entire harness is assembled to the storm sash 15 in the manner illustrated in FIG. 2 at ground level. The cable 20 is then drawn upwardly to lift the storm sash 15 to the window level. When sufficient height is obtained, the ring 51 is passed over the hook 21 of the window sill bracket 11 so that the sash 15 will be supported by the bracket 11.

The operator then removes the upper clamp 55 and manipulates the storm sash 15 to engage its brackets 67 with the hooks 66. The storm sash is now being supported by the window frame 65 and the clamp 35 can be removed from the lower edge of the storm sash 15. The wing nut 30 is unloosened to release the bracket 11 from the window sill 31 and the lower portion 10 of the harness as well as the bracket 11 are removed. The

lower portion of the storm sash 15 is then merely pivoted inwardly and locked in place in the conventional manner.

From the foregoing detailed description of the construction and operation of the illustrative embodiment of the present invention it will become apparent that a new and improved storm sash handler has been provided which facilitates the installation of storm sash into windows at upper levels as well as the removal of such storm sash therefrom.

Although the illustrative embodiment of the present invention has been described in considerable detail for the purpose of making a full disclosure of a practical operative arrangement by means of which the invention may be practised, it is to be understood that various novel features of the invention may be incorporated in other arrangements without departing from the spirit and scope of the invention as defined in the subjoined claims.

The principles of this invention having now been fully explained in connection with the foregoing description, I hereby claim as my invention:

1. In a sash handling apparatus for handling window sash that is adapted to be installed in a window frame; a frame bracket attached to the bottom of the window frame so that it may be removed when the window is installed in the frame; a harness attached to said storm window sash so that it may be removed when the window is installed in the frame; and coupling means for coupling said harness to said frame bracket for supporting said sash at the window frame to relieve the operator of the necessity of continuously holding up the weight of the sash while it is being installed in said frame and while it is being removed therefrom to facilitate handling said sash by the operator while installing it in said window frame or while removing it therefrom.

2. A sash handling apparatus according to claim 1; including elevating means attached to said harness for elevating said sash to the window frame for installation therein; and for lowering said sash from said window frame after it has been removed therefrom.

3. A sash handling apparatus according to claim 2; wherein said elevating means comprises a cable attached to said harness for elevating and lowering the sash.

4. A sash handling apparatus according to claim 1; wherein said harness comprises a bottom sash bracket attachable to the bottom of the sash; a strap having its first end coupled to said bottom sash bracket and its second end coupled to said coupling means for coupling said harness to said frame bracket for supporting the sash at the window frame.

5. A sash handling apparatus according to claim 4 wherein said harness includes a top sash bracket attachable to the top edge of the sash; an eye secured to said strap; and a cable having one end secured to said top sash bracket and passing downwardly therefrom and through said eye, and upwardly from said eye through a hole in said top sash bracket so that the portion of said cable above said top sash bracket may be grasped for elevating and lowering the sash and the weight of the sash on said cable will retain said top sash bracket in position on the top edge of said sash.

6. A sash handling apparatus according to claim 5; wherein said frame bracket comprises a clamp for clamping the bracket to the sill of the window frame; and a hook attached to said clamp to receive said coupling means for supporting the sash at the window frame.

7. A sash handling apparatus according to claim 1; wherein said frame bracket comprises a clamp for clamping the bracket to the sill of the window frame; and a hook attached to said clamp for receiving said coupling means for supporting the sash at the window frame.

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