Dec. 5, 1944. A. KELLER 2,364,224

HOISTING MEANS

Filed Dec. 13, 1943

FIG. 1.

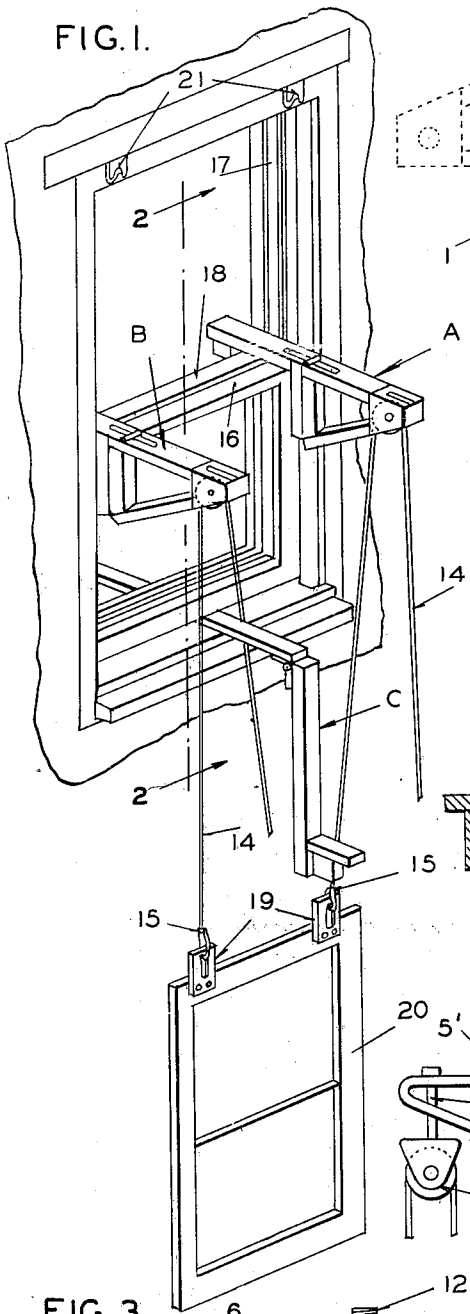


FIG. 2.

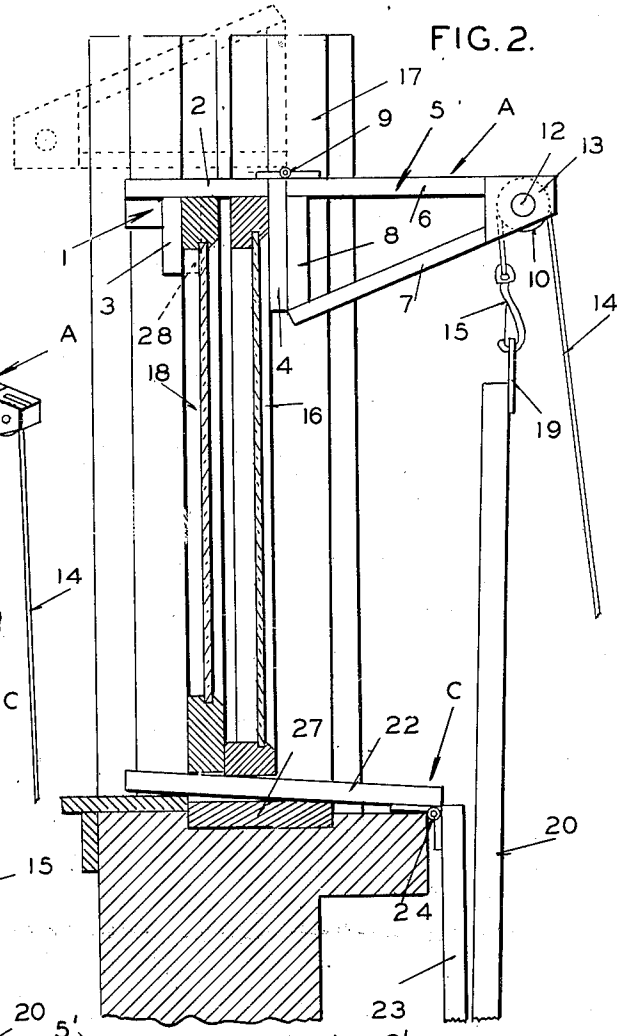


FIG. 4.

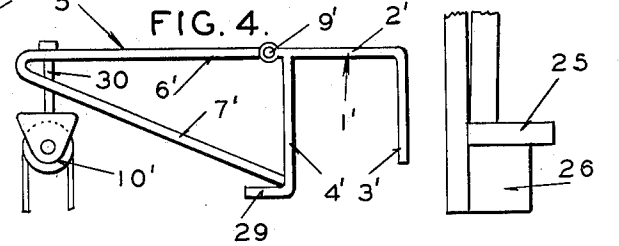
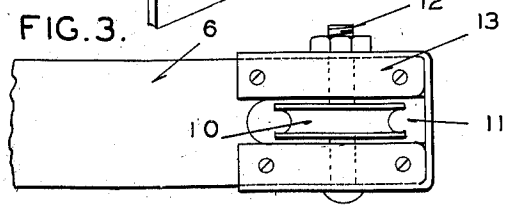


FIG. 3.



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HOISTING MEANS

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15 Claims. (Cl. 214—95)

My invention relates to hoisting means and more particularly to one for use with building windows.

One of the objects of my invention is to produce an improved portable hoisting means which can be quickly and easily attached to a building window structure and employed for lifting articles, such as storm windows, to and lowering them from an upper story.

Another object of my invention is to produce an improved hoisting means, including a hoisting device, which can be fastened to a window sash for lifting and lowering a storm window, said device being so arranged that the pulley carrying projecting part can be moved out of the way during installation of the storm window on its hangers and its removal therefrom.

Still another object of my invention is to provide improved means for association with a window sash and a window frame for raising and lowering a storm window and for supporting it adjacent the window during the hanging and unhanging operations.

A still further object of my invention is to provide portable means for aiding in the installation and removal of storm windows which is simple in construction, economical to manufacture, and easily and safely usable in order to save labor and prevent damage.

Other objects of my invention will become apparent from the following description taken in connection with the accompanying drawing in which Figure 1 is a view showing my improved hoisting and supporting means as associated with a building window when being used as an aid in installing or removing storm windows; Figure 2 is a sectional view taken on the line 2—2 of Figure 1 but showing the storm window resting on the supporting means; Figure 3 is a top view showing details of the pulley and its manner of mounting on the outer end of the arm of a hoisting device; and Figure 4 is a view of a modified hoisting device.

Referring in detail to the drawing, my hoisting means comprises essentially three elements, namely, two like hoisting devices A and B and a supporting means C. The hoisting devices A and B are adapted to be mounted on the window sash frames and the supporting means C is adapted to be associated with the sash and the bottom of the window frame where it is held in position.

Each hoisting device comprises a U-shaped bracket 1 having a base portion 2 and legs 3 and 4. As shown, the bracket is made of wood with the base portion and legs comprising separate members secured together by suitable means, such as nails or screws. Associated with the bracket is an arm 5 shown as formed of three wooden members 6, 7, and 8 arranged in the shape of a right-angle with members 6 and 8 positioned at right-angles to each other and member 7 connected between the members 6 and 8 and arranged to form the brace of the arm. The arm is pivotally connected to bracket 1 by a hinge 9, said hinge being connected to the base member 2 of the bracket and member 6 of the arm so that the arm can assume a position where the member 8 cooperates with leg 4 of the bracket and extends outwardly from the bracket as shown in Figures 1 and 2. The hinge connection permits the arm to be swung about the bracket to a position where the arm will overlie the base of the bracket, that is, member 6 of the arm and the base member 2 of the bracket will be in juxtaposition. The outer end of the arm at the juncture of the members 6 and 7 carries a pulley 10 which is positioned in a slot 11, the pulley being journaled on a bolt 12. A metal re-enforcing member 13 is positioned over the joined ends of members 6 and 7 and thus maintains these members together and also provides a wear resisting bearing for the bolt 12. A cord 14 passes over the pulley and has a snap 15 secured to one end.

When devices A and B are to be mounted upon the window, the upper sash frame 16 thereof is lowered in window frame 17 to its fullest extent so that it is positioned alongside the lower sash frame 18. With these positions the tops of both sash frames are together so that the U-shaped bracket 1 of the hoisting device may be inverted and slipped over these ends at the side of the sash frame so that the legs will extend downwardly along the side frame member of each sash. When the hoisting means is to be used, the arm 5 of each hoisting device is swung outwardly to the position shown in Figure 2 so that the outer end of the arm and pulley will be away from the building. To raise or lower a storm sash the snaps 15 on the cords are attached to the hangers 19 of the storm window 20. If the storm window is on the ground, it can be raised up to the window by pulling on the cords. If it is already up at the window, it can be lowered to the ground by means of the cords.

During the installing of the storm window on the hooks 21 at the top of the window frame and removing it therefrom, it is desirable to have a support for the storm window so as to permit easy attaching and detaching of the cords to

the storm window hangers. This support is provided by the previously mentioned supporting means C which is so constructed as to be readily associated with the window. As best shown in Figure 1, the supporting means comprises two members **22** and **23**, such as strips of wood, which members are pivoted together by a hinge **24**. The free end of the member **23** carries a rest **25** having a brace **26** associated therewith. The supporting means is placed in position by merely placing member **22** across the center of the bottom member **27** of the window frame so that the members **23** can hang downwardly alongside the building below the window sill. The supporting means is maintained in position by the two window sashes when in their lowered positions, it being noted that member **22** will then be held between the bottom member **27** of the window frame and the bottom frame members of the window sashes. The member **23** of the supporting means is of such length that when the bottom of the storm window is positioned on the rest **25**, the top of the storm window will be just below the arms of the hoisting devices.

With this supporting means it is seen that when the storm window is being hoisted from the ground for installation, the bottom thereof can be positioned on the supporting rest **25** after the storm window has been pulled up to where the top of the storm window is just beneath the arms. With the storm window in this position it is not necessary for the person installing the storm window to support it by his own strength and, therefore, he will be free to unsnap the cords from the hangers **19** of the storm window. When this is done, each of the arms **5** can be swung back out of the way to the position shown in dashed lines in Figure 2. With the arms out of the way they cannot interfere with the actual hanging of the storm window. To install the storm window the person need only reach over the top of the two lowered sashes and grasp the storm window on each side intermediate its ends. He is then in a good position to raise the storm window through a distance approximately half its length and to then place the hangers **19** on hooks **21**.

In removing a storm window the operation is reversed. The supporting means is first associated with the window and then the hoisting device is mounted on the window sashes with the upper sash in lowered position. The arm A will be placed in the dashed line position. The storm window is then unhooked and its bottom positioned on the rest **25** of the supporting means. The arms are now swung outwardly and the cord snaps attached to the hangers **19**. The storm window can then be readily lowered by the cords.

Since window sash frames are generally of two thicknesses, it is desirable to so construct the bracket so it can be used with either size. To accomplish this the bracket **1** is made so that the space between legs **3** and **4** will fit the thicker sash frames. When the bracket is to be used with the thinner sash frames, a block **28** is provided which is attached to the inside of leg **3**, as indicated by dashed lines in Figure 2.

From the foregoing description of my hoisting means, it is seen that a storm window can be very easily and quickly installed or removed from an upper story window frame. The use of tall ladders for hanging or the carrying of the storm window through the house and boosting it through the window are both eliminated by the use of the hoisting means. By using the hoisting means, handling is reduced to a minimum, thus decreasing the possibilities of glass breakage. There is also a considerable saving in labor as it permits the storm window to be easily raised to an upper story window or lowered therefrom. When the storm window is at the upper story window and positioned on the rest of the supporting means C, it is in a good position for proper grasping to place the hangers on the hooks.

In Figure 4 there is shown a hoisting device which can be made from metal. The bracket **1'** is made of a single member formed in the shape of a U with a base portion **2'** and legs **3'** and **4'**, the leg **4'** having an outwardly extending projection **29**. The arm **5'** is also made of a single piece of metal bent in the form of a V with the leg portion **6'** pivoted to the bracket **1'** by a pivot pin **9'** and the other leg portion **7'** acting as the brace with its end adapted to abut the leg **4'** of the bracket and to be retained in position by the projection **29**. The pulley is mounted on the end of the arm by a bolt **30**. The hoisting device is used in the same manner as the one previously described.

Being aware of the possibility of modifications in the particular structure herein described without departing from the fundamental principles of my invention, I do not intend that its scope be limited except as set forth by the appended claims.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. In hoisting means for association with a window, a bracket having a part for positioning adjacent the inner side of a window sash frame and a second part overlying said frame, an arm pivoted to the second part of the bracket and having a portion for association with the outer side of a window sash frame when the arm extends from the bracket outwardly with respect to the window, said pivoted connection permitting the arm to be swung about the bracket to a position where it is in overlying relation to the second part of said bracket, means comprising an additional sash flange abutting part on the bracket for maintaining the bracket in position on the sash frame when the arm is swung to the overlying position but permitting ready mounting and removal of the bracket, and a pulley carried by the outer end of the arm.

2. In hoisting means for association with a window, a bracket having a part for positioning adjacent the inner side of a window sash frame and a second part overlying said frame, an arm pivoted to the second part of the bracket and having an outwardly extending portion, a portion for association with the outer side of a window sash frame when the arm extends from the bracket outwardly with respect to the window and a brace portion between said two portions, said pivoted connection permitting the arm to be swung about the bracket to a position where it is in overlying relation to the second part of said bracket, means for maintaining the bracket on the sash frame when the arm is swung to overlie the second part of the bracket, and a pulley carried by the outer end of the arm.

3. In hoisting means for association with a window, a hoisting device comprising a U-shaped bracket for receiving a part of the window sash frame between its legs, an arm pivoted to the base portion of the bracket and having a brace portion engaging a side portion of one of the

bracket legs when the arm extends outwardly from the bracket, said arm being free to be turned about the pivot and to a position overlying the base portion, and a pulley carried on the end of the arm.

4. In a device for use with window sash frames, an inverted U-shaped bracket for fitting over the tops of the sash frames when positioned side by side, an arm member hinged to the base portion of the U-shaped bracket and having a part engaging a side of one leg portion of the bracket to position the arm in an outwardly projecting manner, said hinge permitting the arm to be swung about the bracket to a position overlying the base portion of the bracket, and a pulley carried by the free end of the arm.

5. In a device for use with window sash frames, an inverted U-shaped bracket having rigid leg portions for fitting over the tops of the sash frames when positioned side by side, an arm member hinged to the base portion of the U-shaped bracket, said arm comprising a member extending away from the hinge, a second member at right angles thereto for cooperation with one leg portion of the bracket and a brace member between the first two members, said hinge permitting the arm to be swung about the bracket to a position overlying the base portion of the bracket, and a pulley carried by the free end of the arm.

6. A portable hoisting device comprising an attaching bracket in the form of an inverted U having rigid leg portions, an arm pivoted to said bracket at the juncture of the base portion and one of the leg portions, said arm having a portion adapted to engage with one of said leg portions when the arm is in one position extending laterally away from the leg portion of the bracket, said pivoted connection permitting the arm to be swung to a position where it overlies the base portion of the bracket, and a wheel mounted on the outer end of the arm.

7. In means for aiding the hanging and unhanging of storm windows, portable hoisting devices detachably mountable on building windows, each of which comprises mounting means, an arm pivoted thereto in order to permit the outer end of the arm to be positioned outwardly beyond the wall of the building or to be swung without movement of the mounting means to a position where it does not interfere with the positioning of the storm window on the building window frame, a pulley mounted on the arm, a cord for the pulley, and supporting means having a part extending below the window and provided with a rest for the bottom of the storm window.

8. In means for aiding the hanging and unhanging of storm windows, the combination with window sash, portable hoisting devices mountable on sash frames when in down position, each of said devices comprising a pivoted arm which can be positioned to extend outwardly from the outer plane of the sash or inwardly thereof, a pulley on the outer end of the arm and a cord for the pulley, and supporting means for the bottom of the storm window having a part provided with a rest below the building window and an angularly related holding part positionable between the bottom of the window sash and the bottom of the building window frame.

9. In means for aiding the hanging and unhanging of storm windows, the combination with building window sash, hoisting devices mountable on the top portions of the sash frames when in their down positions, said hoisting devices comprising a bracket for association with the sash frames, an arm pivoted to the bracket so as to be positioned to extend outwardly from the sash or to be positioned inwardly of the outer plane of the outer sash without movement of the bracket, a pulley on the outer end of the arm, a cord for the pulley, and supporting means for the bottom of the storm window having a rest part below the building window and a part to be held between the bottom of a window sash and the bottom of the building window frame.

10. In means for aiding the hanging and unhanging of storm windows, a supporting means for the storm window comprising two members connected together, one of said members being arranged to be held between a window sash frame and the bottom member of the frame in which the sash is mounted and the other of said members being arranged to extend downwardly alongside the building wall below the window sill, and a rest member carried by the lower end of said other member and arranged to readily receive the bottom of the storm window and support said window in a position partly below and partly above the window sill.

11. In means for aiding the hanging and unhanging of storm windows, a supporting means for the storm window comprising two members, means for pivotally connecting the ends of said members together, one of said members being arranged to be held between a window sash frame and the bottom member of the frame in which the sash is mounted and the other of said members being so movable about the pivotal connection as to extend downwardly alongside the building wall below the window sill, and a rest member carried by the lower end of said other member and arranged to readily receive the bottom of the storm window and support said window in a position partly below and partly above the window sill.

12. In means for aiding the hanging and unhanging of storm windows, hoisting means comprising a portable hoisting device having a bracket member for detachably mounting on a window sash frame, an arm connected with the bracket to extend outwardly from the plane of the window, a pulley mounted on the arm and a cord for the pulley adapted to be attached to the storm window, and portable supporting means adapted to be associated with the window and having a part extending below the window and provided with a rest for the bottom of the storm window.

13. In hoisting means, a hoisting device comprising a rigid U-shaped bracket for holding the device on a member by its leg portions, a V-shaped arm, means for pivoting a free end of one leg of the arm to the bracket adjacent the juncture of a leg and the base portion thereof to thereby permit it to be swung outwardly or to a position overlying the bracket, said free end of the other leg of the arm being arranged to abut the bracket to form a brace for the pivotally connected leg of said arm when the arm is in an outward position, and a pulley carried by the arm.

14. In hoisting means, a hoisting device comprising a U-shaped bracket made from a single piece of material, a V-shaped arm made from a single piece of material, means for pivoting the free end of one leg of the arm to the bracket adjacent the juncture of one of its legs and its base portion to permit the arm to be swung about the bracket from a position where the free end of the other leg of the arm engages a leg of the bracket to form a brace to a position where the

arm overlies the bracket, and a pulley carried by the arm.

15. In hoisting means, a hoisting device comprising a U-shaped bracket, a V-shaped arm, means for pivoting a free end of the leg of the arm to the bracket adjacent the juncture of a leg and the base portion thereof, said leg of the bracket adjacent the arm having an outward projection on its end and said free end of the other leg of the arm being arranged to abut the bracket leg at a point adjacent the projection to form a brace for the pivotally connected leg of said arm, and a pulley carried by the arm.

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