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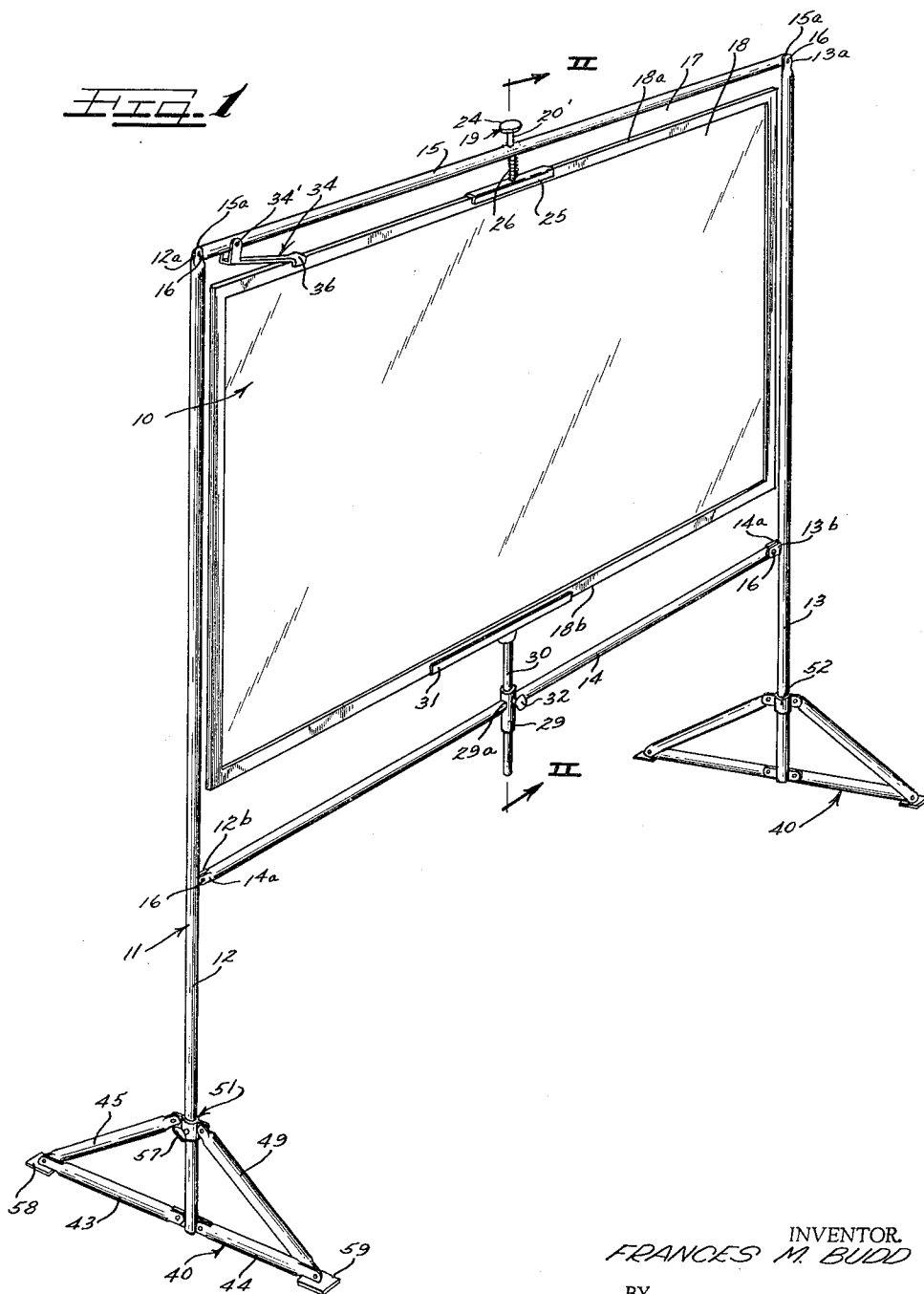
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3,087,186

STORM WINDOW AND SCREEN CLEANING RACK

Filed April 12, 1962

2 Sheets-Sheet 1



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FIG. 2

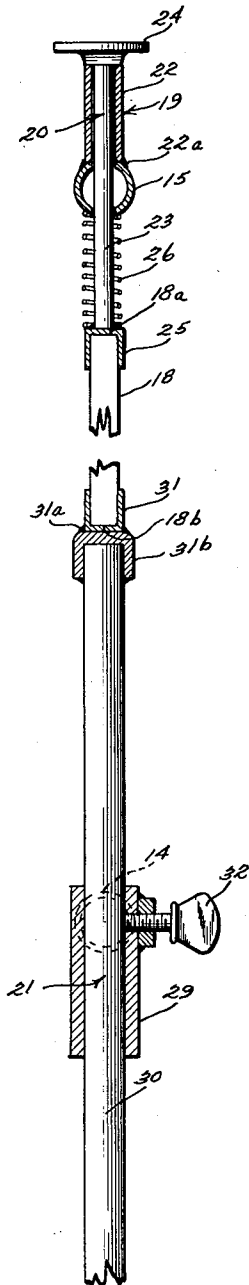


FIG. 3

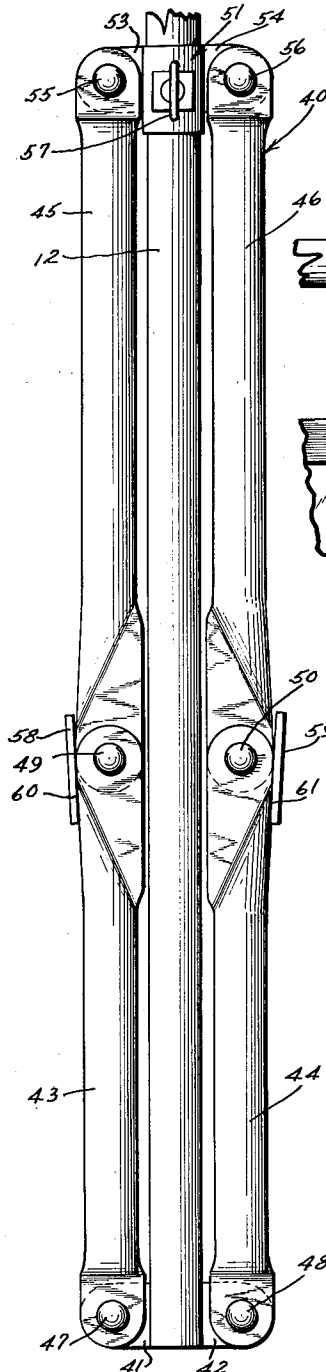


FIG. 4

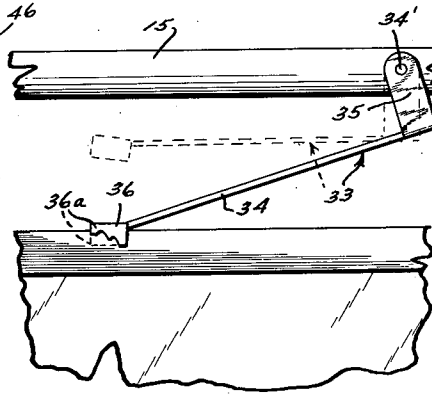
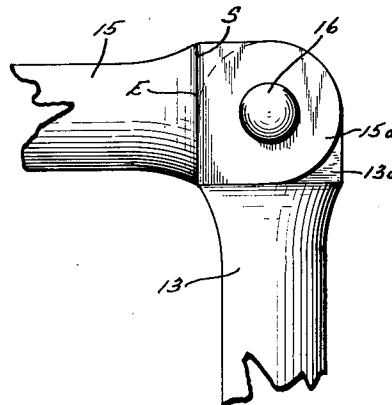


FIG. 5



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STORM WINDOW AND SCREEN CLEANING RACK

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12 Claims. (Cl. 15—268)

The present invention relates generally to a window panel cleaning rack on which panels such as screens, storm windows and the like can be mounted for cleaning and polishing.

With the advent of modern types of metal casement windows having slidable screen and window panels including storm window panels, a home owner may clean his windows and screens in a different manner than formerly. It will be appreciated that before the development of modern types of metal windows, that heavy wooden frames were used on the windows and frames and that most home owners would take down and place in storage the screens or storm windows according to the season of the year. With the new type of windows, the home owner very often merely removes the window panels and/or the storm window panels and/or the screen panels and then immediately cleans the removed panel and replaces it in the window frame. In order to aid the home owner in performing the cleaning operation, a new type of storm window and screen cleaning rack has been developed in accordance with the present invention.

The user of the rack which is the subject matter of the present invention, may carry the rack from room to room for the purpose of cleaning the window panels on the modern type metal windows commonly in use in many homes today. The rack is made of lightweight materials and provided with a collapsible base so that it may be easily carried from room to room by the user and readily mounted in position so that the wife can now easily perform the window cleaning chores.

After the window panel has been removed from the metal casement, it may be placed on the rack. According to the present invention, after one side of the window panel has been cleaned, the window panel may be rotated 180° without having to remove it from the rack so that the user can clean both sides of the window panel from one side of the rack. This feature is advantageous since many steps may be saved and it will not be necessary to move window cleaning gear such as brushes, rags, fluid cleaner and the like from one side of the rack to the opposite side of the rack to clean both sides of a window panel such as a storm window.

It is an important object of this invention to provide a new and improved window panel cleaning rack which may be readily transported throughout the home of the user in connection with the cleaning of casement window panels such as screen panels, storm window panels and the like.

Still another object of this invention is to provide a window panel cleaning rack whereby both sides of the window panel may be cleaned from one side of the rack.

Still another object of this invention is to provide a window panel cleaning rack which is of a rugged construction and capable of being manufactured at the lowest possible cost.

Other objects and features of the present invention will more fully become apparent from the following detailed description when taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a perspective view of a window panel cleaning rack for a screen panel mounted thereon in accordance with the principles of my invention;

FIGURE 2 is an enlarged fragmentary vertical section taken substantially on the line II—II looking in the direction of the arrows as indicated in FIGURE 1;

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FIGURE 3 is a fragmentary side view of the collapsible base shown in a collapsed position;

FIGURE 4 is a fragmentary view illustrating the manner in which the window panel can be locked in the plane of the rack frame; and

FIGURE 5 is an enlarged fragmentary side elevation of a junction between rack posts.

As shown on the drawings:

The reference numeral 10 indicates generally a window panel cleaning rack. The rack 10 includes a frame 11 having four tubular posts 12, 13, 14 and 15. The posts 12 and 13 are vertical posts and the posts 14 and 15 are transverse or horizontal posts. The posts are of a tubular construction and it will be noted that the transverse posts have flat ends 14a, 14a and 15a, 15a. Each of the vertical posts also have upper flat ends or portions 12a and 13a providing seats for the ends 15a, 15a of the transverse post 15. The vertical posts 12 and 13 are also provided with tabs 12b, 13b intermediate opposite ends thereof and the flat ends 14a, 14a are engaged therewith. When the frame 11 is assembled, nut and bolt fasteners 16 are employed for the purpose of securing the ends of the transverse posts with the upper ends of the vertical posts and with the vertical post tabs 12b and 13b, as outlined above.

When the posts are in assembly together, it will be noted that the transverse posts 14 and 15 cooperate with the upper ends of the vertical posts 12 and 13 in creating a frame like enclosure or window panel enclosure indicated generally at 17 for receipt of a window panel or screen 18. It will be appreciated that a screen or storm window or other window panel can be mounted within the frame like enclosure 17, as desired.

Means indicated generally at 19 is provided for supporting the window panel or screen 18 on the window panel enclosure 17. The means or structure 19 includes upper and lower means 20 and 21 for pivotally clamping upper and lower edge 18a of the window panel 18. The upper means 20 includes a sleeve 22 welded or otherwise suitably secured with the uppermost transverse post 15 as indicated at 22a. A pin 23 is journaled within the sleeve and has a handle 24 at one end and an upper channel 24 at an opposite end. The channel 25 has a configuration corresponding generally to the exterior configuration of the panel 18 which may be generally U or C-shaped. A spring 26 is mounted on the pin 23 for urging the upper channel 25 toward the lowermost transverse post 14.

The means 21 includes a sleeve 29 welded as indicated at 29a (FIGURE 1) or otherwise suitably attached to the lowermost transverse post 14. Mounted within the sleeve 29 is a pin 30 having a lower channel 31 welded at 31a or otherwise suitably attached at its uppermost end on channel support cap 31b. The lower panel 31 has a configuration similar to the upper channel 25. Means is provided enabling the panel 31 to be vertically adjusted with respect to the upper channel 25 with the means including a set screw 32 secured in threaded assembly with the sleeve 29 and bearing against the pin 30. By releasing the set screw 32, the channel 31 may be moved up and down in any selected position and locked in this position by securing the set screw against the pin 30.

The frame 11 is further provided with means or structure 33 (FIGURE 4) for securing the panel coplanar with the frame like enclosure 17. The means 33 comprises an arm 34 having an upper U-shaped end 35 pivotally secured by means of an arm pin 34' to the uppermost transverse post 15. The arm 34 also has a channel or U-shaped end 36. The channel 36 has channel legs 36a, 36a engaged with the opposite sides of the screen or panel 18

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to lock the panel 18 in a position coplanar with a vertical plane through the frame 11.

The screen 18 may be mounted on the rack 10 in several different ways. One way in which the screen 18 can be mounted on the frame 11 is by releasing the set screw 32 so that the channel 31 will rest generally at its lowermost position on top of the sleeve. The lower edge of the screen 18 may be guided into the channel 31. The channel 31 may be elevated so that the upper edge of the screen can be brought into proximity to and engaged with the upper channel 25. In practice, the preferred procedure is to elevate the channel 31 sufficiently so that the channel 25 also will be slightly elevated with respect to the normal position of the channel when the channel 25 is free of the panel 18 whereby the spring 26 can exert a spring force against the channel 25 to maintain the screen 18 in spring mounted assembly with the channels 25 and 31. After the screen has been engaged with both of the channels 25 and 31 and turned coplanar with the frame 11, the set screw 32 may be turned to lock the channel 31 in its vertically adjusted position. The pivotal arm 34 may be then adjusted so that its channel shaped end 36 is engaged with an upper edge of the screen or window 18 to lock the window 18 in a coplanar position on the frame 11. After one side of the window panel 18 has been cleaned, the arm 34 may be elevated so as to disengage its channel end 36 from the screen. The screen or panel member 18 then can be rotated 180° on its pivotal mountings and again locked in a coplanar position by means of the arm 34 in the same manner described above so that the user can clean an opposite side of the panel 18 from the same side of the rack 10.

A pair of collapsible bases 40 are mounted on lower ends of the legs 12 and 13. Since the collapsible bases 40 are identical, a description of one will suffice for both. To this end, the leg 12 has base attachment flanges 41 and 42 welded or otherwise suitably secured on its lowermost end.

The collapsible base 40 includes collapsible base legs 43, 44, 45 and 46. The legs 43 and 44 are joined with the base attachment flanges 41 and 42 by any suitable fasteners such as nut and bolt fasteners, as indicated at 47 and 48. The opposite ends of the base legs 43 and 44 are joined with associated ends of the base legs 45 and 46 by means of fasteners 49 and 50 which may be of any suitable type such as nut and bolt type fasteners. The base 40 further includes a slidable sleeve 51 slidably mounted on the post 12. The slidable sleeve 51 has a pair of attachment flanges 53 and 54. The upper ends of the base legs 45 and 46 are secured to the attachment flanges 53 and 54 by suitable fasteners 55 and 56, which fasteners may comprise nut and bolt type fasteners. The collapsible base 40 may be secured in an upright position, as shown in FIGURE 3, or in a lowered position, as shown in FIGURE 1. A set screw 57 is provided for securing the sleeve 51 in any desired position. In this respect, the set screw is adapted to clamp the sleeve 51 to the post 12 in order to hold the collapsible base in the desired position on the leg 12.

Pads 58 and 59 are welded or otherwise suitably attached as indicated at 60 and 61 to the base legs 43 and 44 opposite the pivot pins 49 and 50. When the collapsible stand 40 is disposed in a lowered rack supporting position, the pads 58 and 59 are engaged with the ground for supporting the rack thereon.

By providing the collapsible base 40 of the present type, it will be appreciated that the rack 10 can be conveniently transported from room to room so that the base 40 will not strike doorframes and the like. The collapsible base may be readily secured in an upright position or in a lowered rack supporting position merely by turning the set screw 57.

I claim as my invention:

1. In a window panel cleaning rack, a frame including

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spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

and means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated 360° to enable opposite sides of the window panel to be cleaned from one side of the rack.

2. In a window panel cleaning rack, a frame including spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

and means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated 360° to enable opposite sides of the window panel to be cleaned from one side of the rack,

said uppermost channel having spring means for urging a window panel toward the lowermost channel.

3. In a window panel cleaning rack, a frame including spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated 360° to enable opposite sides of the window panel to be cleaned from one side of the rack, and

means mounted on the frame comprising a hook for engaging a window panel to hold the window panel in a plane common with a vertical plane through the frame like enclosure.

4. In a window panel cleaning rack, a frame including

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spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated 360° to enable opposite sides of the window panel to be cleaned from one side of the rack, and

means on said sleeve engageable with said pin for permitting the lowermost channel to be moved vertically with respect to the uppermost channel so that different sized window panels may be mounted within said frame like enclosure.

5. In a window panel cleaning rack, a frame including spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

and means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated 360° to enable opposite sides of the window panel to be cleaned from one side of the rack,

said hook like member having a channel shaped end for locking a frame of a window panel in a position coplanar with said frame.

6. In a window panel cleaning rack, a frame including spaced vertical tubular posts each having a collapsible base at a lowermost end,

spaced transverse tubular posts mounted on said vertical posts forming a frame like enclosure for a window panel,

and means for supporting a window panel within the frame like enclosure including a vertically extending sleeve mounted on a lowermost of the spaced transverse tubular posts,

said means including a panel supporting channel pivotally mounted on a pin engaged within said sleeve and with said means further including an upper channel on the uppermost post,

the uppermost channel being pivotally mounted on an uppermost of the spaced tubular posts,

the panel supporting channel and the uppermost channel having grooves disposed in confronting relation with respect to each other for receiving spaced margins of a window panel therein,

whereby the pivotally mounted channels may be rotated

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360° to enable opposite sides of the window panel to be cleaned from one side of the rack,

each of said collapsible bases comprising a pair of base legs pivotally secured at one end with the associated vertical post and a second set of legs,

the second set of legs being pivotally connected with ends of said base legs,

the second legs being pivotally connected at the other ends with a sleeve slidably mounted on said vertical post,

the sleeve having a thumb screw for fixedly securing the sleeve with the vertical leg in order to permit the legs to be placed in an extended position or a collapsed position, as desired.

7. In a window panel cleaning rack, a frame including spaced vertical posts each having a collapsible base at a lowermost end,

spaced transverse posts mounted on said vertical posts forming a window frame enclosure for a window panel,

means for supporting a window panel within the frame like enclosure,

said means including a lowermost panel supporting channel pivotally mounted on the lowermost of said transverse posts,

said means further including an uppermost channel pivotally mounted on an uppermost of the spaced transverse posts,

the channels having channel grooves being disposed in confronting relation with respect to each other for receiving opposite margins of a window panel therebetween and with the channels being rotatable 360° relative to the window panel enclosure to enable opposite sides of a window panel to be cleaned from one side of the rack, and

means mounted on said frame for locking a window panel in a plane common to a plane through said window panel enclosure.

8. In a window panel cleaning rack, a frame including spaced vertical posts each having a collapsible base at a lowermost end,

spaced transverse posts mounted on said vertical posts forming a window frame enclosure for a window panel,

means for supporting a window panel within the frame like enclosure,

said means including a lowermost panel supporting channel pivotally mounted on the lowermost of said transverse posts,

said means further including an uppermost channel pivotally mounted on an uppermost of the spaced transverse posts,

the channels having channel grooves being disposed in confronting relation with respect to each other for receiving opposite margins of a window panel therebetween and with the channels being rotatable 360° relative to the window panel enclosure to enable opposite sides of a window panel to be cleaned from one side of the rack, and

means mounted on said frame for locking a window panel in the plane common to a plane through said window panel enclosure,

the lowermost of the transverse posts having a sleeve mounted thereon and with said lowermost supporting channel having a pin pivotally engaged in said sleeve and with the sleeve having a lock screw for securing the lowermost panel supporting channel in a vertically adjusted position.

9. In a window panel cleaning rack, a frame including spaced vertical posts each having a collapsible base at a lowermost end,

spaced transverse posts mounted on said vertical posts forming a window frame enclosure for a window panel,

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means for supporting a window panel within the frame like enclosure,
 said means including a lowermost panel supporting channel pivotally mounted on the lowermost of said transverse posts,
 said means further including an uppermost channel pivotally mounted on an uppermost of the spaced transverse posts,
 the channels having channel grooves being disposed in confronting relation with respect to each other for receiving opposite margins of a window panel therebetween and with the channels being rotatable 360° relative to the window panel enclosure to enable opposite sides of a window panel to be cleaned from one side of the rack, and
 means mounted on said frame for locking a window panel in a plane common to a plane through said window panel enclosure,
 one of said channels having spring means enabling the same to be moved relative to the window panel enclosure.
 10. In a window panel cleaning rack, a frame including spaced vertical posts each having a collapsible base at a lowermost end,
 spaced transverse posts mounted on said vertical posts forming a window frame enclosure for a window panel,
 means for supporting a window panel within the frame like enclosure,
 said means including a lowermost panel supporting channel pivotally mounted on the lowermost of said transverse posts,
 said means further including an uppermost channel pivotally mounted on an uppermost of the spaced transverse posts,
 the channels having channel grooves being disposed in confronting relation with respect to each other for receiving opposite margins of a window panel therebetween and with the channels being rotatable 360°

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relative to the window panel enclosure to enable opposite sides of a window panel to be cleaned from one side of the rack, and
 means mounted on said frame for locking a window panel in a plane common to a plane through said window panel enclosure,
 said window panel enclosure having four corners defined by the transverse and vertical posts,
 the posts having means including engaged post edges and shoulders for locking the posts at the corners in right angle relation with respect to one another.
 11. In a window panel cleaning rack, a frame including spaced upright posts, means connected with said upright posts providing a base for the rack, spaced transverse posts mounted on said upright posts forming a frame-like enclosure for a window panel, a pair of vertically spaced channels having grooves opening in confronting relation with respect to one another for receipt of opposite upper and lower margins of a window panel therein, and pivot means connecting said upper and lower channels with said transverse posts whereby the pivotally mounted channels may be rotated 360° on a vertical axis within the frame-like enclosure so that when a window panel is engaged with the channels opposite sides of the window panel can be cleaned from one side of the rack.
 12. The rack of claim 11 further characterized as having resilient means for clamping opposite upper and lower margins of a window panel in assembly with said channels, said means permitting said channels to be moved apart to effect removal of a window panel from said channels.

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