Dec. 27, 1949 P. L. SHEA 2,492,598

OUTSIDE SUPPORT OR SCAFFOLD FOR WINDOW CLEANERS AND THE LIKE

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Fig. 1.

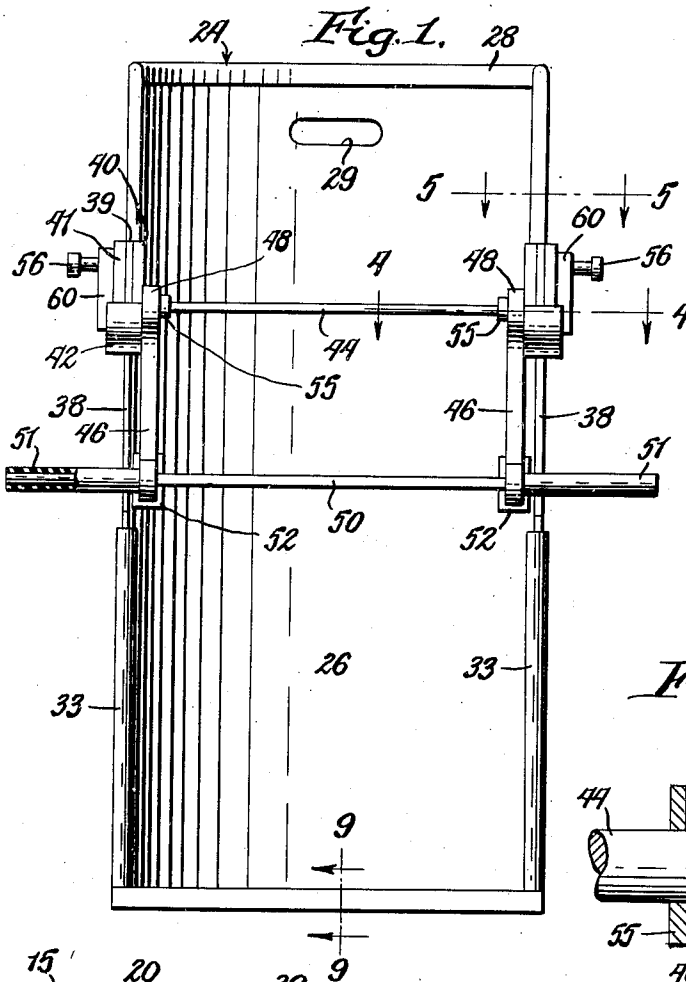


Fig. 2.

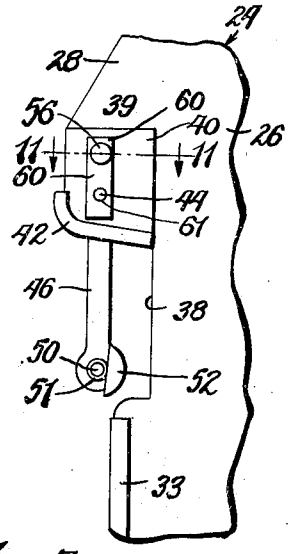


Fig. 4.

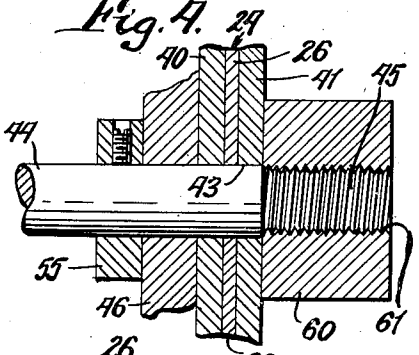


Fig. 3.

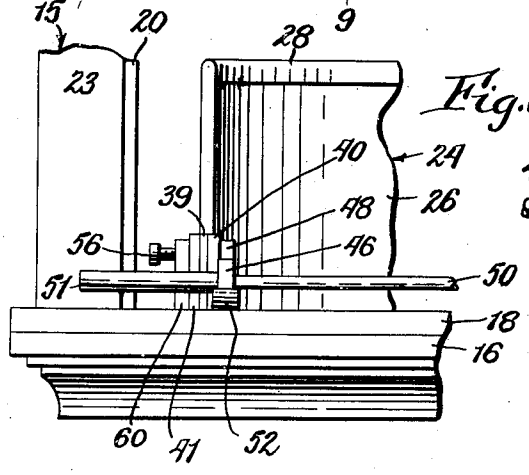
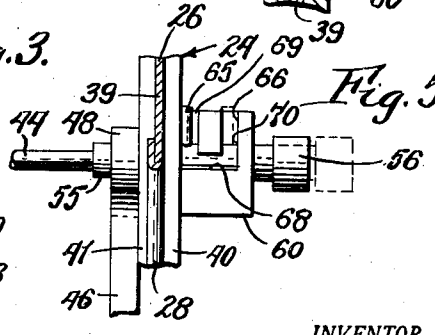


Fig. 5.



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Fig. 6.

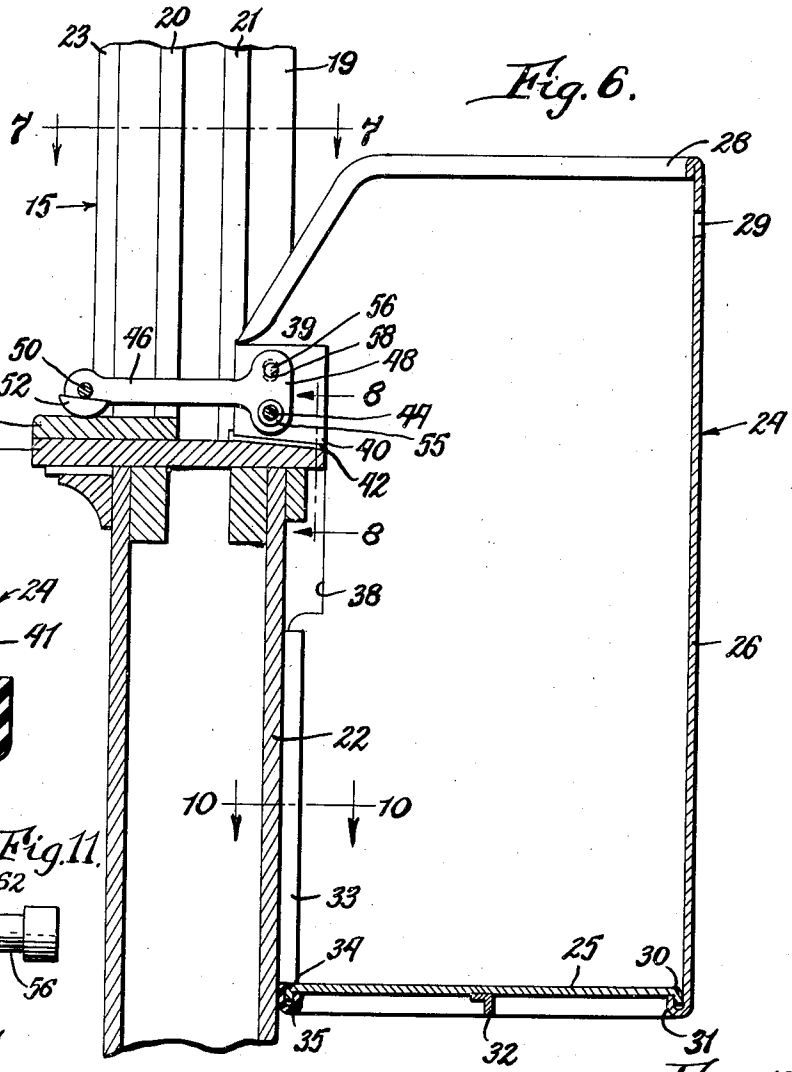


Fig. 8.

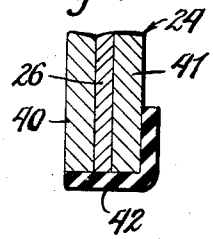


Fig. 11.

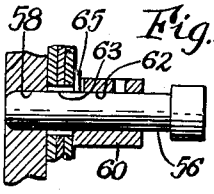


Fig. 7.

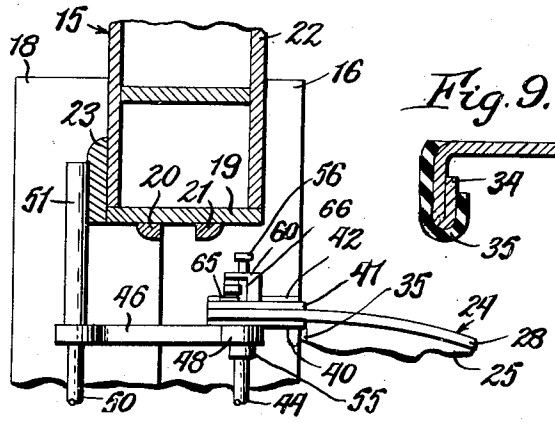


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE

2,492,598

OUTSIDE SUPPORT OR SCAFFOLD FOR WINDOW CLEANERS AND THE LIKE

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Application June 14, 1947, Serial No. 754,632

6 Claims. (Cl. 304—24)

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This invention relates to an outside support or scaffold for window cleaners and the like, and more particularly to such a support which is adapted to support a person exteriorly of the window so that cleaning windows, placing screens, painting windows and the like can be accomplished with ease and safety.

One of the principal objects of the present invention is to provide such a support which is completely safe and which also is so constructed as to facilitate any operation on the exterior of the window. In particular, the support is in the form of a unitary rigid structure which is locked against the outside of the building so as to be rigidly held and thereby secure not only a safe support for the occupant but also to impart to the occupant a feeling of complete safety.

Another object of the invention is to provide such a support which is placed in a locked condition before the operator enters the same and which cannot be unlocked while the operator is carried by the support.

Another object is to provide such a support which is doubly locked so as to further guard against accidental derangement of any of the parts.

Another object is to provide such a support which is light in weight and can be readily moved into and out of the window and into and out of operative position by one having only a moderate amount of strength.

Another aim of the invention is to provide such a support which is guarded throughout by rubber protectors so that there is no danger of injuring the inside woodwork of a building, the exterior of a building, or of injuring the user while stepping into and out of the support.

Another object is to provide such a support which carries the person at a convenient height for cleaning the window while standing erect upon the support and which further provides plenty of room for holding the necessary tools and detergents.

Another object is to provide such a unitary holder which is cut away so as to fit around the exterior of the window sills and which will accommodate a wide variety of shapes and sizes of window sills.

Another object is to provide such a support having strengthening blocks which also provide a broad surface for mounting the support upon the window sill thereby to provide the necessary safety and at the same time avoid injury to the window sill.

Another object is to provide such a support

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which can be provided in different heights to suit the particular use for which the scaffold is to be used.

Another aim is to provide a lock in which the parts are so interrelated as to hold one another in assembled relation regardless of whether the parts are in a locked or an unlocked condition.

Other objects and advantages of the invention will appear from the following description and drawings in which:

Fig. 1 is an elevational view of a supporting device embodying the present invention, the view being taken from the side of the device which in its operative position is arranged against the side of the building.

Fig. 2 is a fragmentary side elevational view thereof.

Fig. 3 is a fragmentary elevational view from the inside of one corner of the window casing and showing the adjacent part of the support embodying the present invention.

Figs. 4 and 5 are enlarged fragmentary horizontal sections taken on the correspondingly numbered lines on Fig. 1.

Fig. 6 is a vertical longitudinal sectional view, this view showing the supporting device mounted upon the sill of a window casing and with the adjacent parts of the building shown in section.

Fig. 7 is a fragmentary horizontal sectional view taken on line 7—7, Fig. 6.

Fig. 8 is an enlarged fragmentary vertical section taken on line 8—8, Fig. 6.

Fig. 9 is an enlarged vertical sectional view taken on line 9—9, Fig. 1.

Fig. 10 is an enlarged horizontal sectional view taken on line 10—10, Fig. 6.

Fig. 11 is an enlarged fragmentary horizontal section taken on line 11—11, Fig. 2.

The device embodying the present invention is adapted to support a person on the exterior of a window casing, indicated generally at 15 and to support the person in a standing position and at such an elevation that all parts of the window are conveniently available for cleaning the exterior of the same, painting or puttying the window casing and sash or the like. The window casing shown in the drawing is of conventional construction for a sliding sash window and is shown as comprising the usual window sill 16 which carries an inner stop 18, and side jambs 19 carrying the usual inner and outer stops 20 and 21 which form the vertical guideways for the sash (not shown). This casing is mounted in the usual window opening provided in the frame of the house which is shown as provided with

siding 22, and the window casing has the usual trim members 23 secured vertically along the inner side of each of the casing jambs 19.

The main body of the support embodying the present invention is generally in the form of a half-barrel indicated generally at 24 and comprising a generally semi-cylindrical sheet metal bottom wall 25 and a generally semi-cylindrical sheet metal side wall 26. The semi-cylindrical side wall 26 is shown as provided with a bead 28 extending around its upper edge and is also shown as provided in its back with a hand hole 29 to facilitate moving the body into and out of the window opening.

To provide a safe, rigid and strong connection between the semi-cylindrical side wall 26 and semi-circular bottom wall 25, the bottom wall, along its semi-circular edge is flanged downwardly, as indicated at 30, and this flange is received in a channel 31 provided by reversely bending the lower edge of the semi-cylindrical side wall 26 as indicated at 31. The reversely bent part 31 of the semi-cylindrical side wall can be crimped against the flange 30 of the bottom 25 and in addition rivets or other fastenings (not shown) can be passed through these parts for additional security. As an additional reinforcement for the bottom wall 25, angle iron supports 32 can be secured along the underside of this bottom wall in any suitable manner.

In use, the lower part of the body 24 rests against the siding 22 of the building and in order to protect the building frame against marring or other injury vertical rubber beads 33, which are U-shaped in cross section, are shown as fitted around the forward vertical edges of the lower part of the semi-cylindrical side wall 26 and cemented or otherwise secured in position. In addition, the lower forward edge of the bottom wall 25 is preferably reinforced by a downwardly extending reversely bent flange 34 and since this flange is also arranged to contact the siding 22 of the building, this flange is shown as provided with a U-shaped rubber protecting bead 35 which can be cemented to the flange 34.

The sill 16 of the window casing projects outwardly beyond the siding 22 of the building and to permit the rubber strips 33 and 35 to fit against the siding the vertical edges of the semi-cylindrical side wall 26 of the body are recessed, as indicated at 38, the outer portion of the window sill 16 fitting into this recess, as best shown in Fig. 1. Above these recesses 38 the forward ends of the semi-cylindrical side wall are extended forwardly beyond the plane of the rubber strips 33 to provide arms or overhangs 39, the lower edges of which are inclined to rest upon the inclined window sill 16. Each of these overhangs is shown as reinforced by an inner metal block or plate 40 and an outer metal block or plate 41. These reinforcing blocks or plates 40, 41 are preferably made of aluminum or other lightweight metal and of generally rectangular form with their lower edges inclined to conform to the inclination of the lower edges of the overhangs 39. Each pair of these plates or blocks 40, 41 can be riveted together and to the interposed overhang 39 and an L-shaped strip of rubber 42 can be adhesively secured to the underside of each pair of these blocks or plates and the interposed overhang 39 as best shown in Fig. 8.

A pair of alining holes 43 extend through the lower parts of each pair of these blocks or plates 40, 41 and the interposed overhang 39 and in

these alining holes are arranged the opposite ends of a rod 44 which extends across the space between the overhangs 39 and these opposite ends being threaded, as indicated at 45, and projecting beyond the outer plates or blocks 41. On this rod 44 are swingably mounted a pair of links 46, each of these links being provided at the end connected with this rod with a T-shaped enlargement 48, one part of which enlargement is apertured to receive the rod 44. In the horizontal position of these links, the parts of the T-shaped enlargements 48 penetrated by the rod 44 are the downwardly extending parts thereof. The opposite or free ends of these links 46 are shown as being enlarged and apertured to receive a cross rod 50 which connects the free ends of these links 46 and is arranged parallel with the rod 44. The opposite ends of this cross rod 50 extend a substantial distance beyond the free ends of the links 46 and are provided with rubber sleeves 51. The rod 50 is of greater length than the width of the window opening provided by the casing 15 and hence it will be seen that the ends of this rod form an anchorage for the support or scaffold, the rubber sleeves 51 thereof bearing against the vertical trim pieces 23 of the window casing and preventing outward movement of the support or scaffold supported by its overhangs 39 on the sill 16, as above described. The enlargements at the outer extremities of the links 46 normally rest on the inner stop 18 carried by the window sill 16 and to prevent marring of this stop the links can be provided with rubber pads 52 of any suitable form.

The links 46 are held against the opposing faces of the inner blocks or plates 40 in any suitable manner as by the provision of collars 55 on the rod 44 on which these links are swingably mounted. These links are locked in their horizontal operative position and for this purpose, in this horizontal operative position of the links 46, the upwardly extending part of each of the T-shaped enlargements 48 at the inner end thereof is adapted to be penetrated by a headed sliding locking pin 56, this part of each link 46 being apertured for this purpose as indicated at 58. Each of these locking pins is slidably and rotatably mounted in a block 60 which is received to the exterior of the semi-cylindrical wall 26 by screwing the same onto the corresponding threaded end 45 of the rod 44, each of these blocks being provided with a threaded bore 61 for this purpose. Each of these blocks 60 is provided in its upper part with a bore 62 in which the corresponding locking pin 56 is slidingly and rotatably mounted and, as best shown in Fig. 11, this bore registers with an opening 63 through the adjacent plates 40 and 41 and semi-cylindrical side wall 26 and, in the elevated operative position of the links 46 also registers with the opening 58 in the corresponding one of these links 46.

As long as the inner ends of the locking pins 56 are retained in the opening 63 through the plates 40 and 41 and semi-cylindrical side wall 26, the blocks 60 are prevented from turning and hence unscrewing from the threaded ends 45 of the cross rod 44. The retracted movement of each of the locking pins 56 is therefore limited to disengagement from the opening 58 of the corresponding link 46 and to this end a retaining pin 65 projects radially outwardly from each of the locking pins 56 and is fast thereto. Each of these retaining pins is arranged in a U-shaped groove 66 extending downwardly from each of the blocks

60 which carry the locking pins 56. As best shown in Fig. 5, this U-shaped groove 66 is slightly wider than the retaining pin 65 arranged therein and is provided with a central cross part 68 which extends parallel with the corresponding locking pin 56 and in vertical alinement with the axis thereof, an inner lateral branch 69, one side of which is provided by the corresponding outer plate 40, and an outer lateral branch 70 extending in the same direction as the inner lateral branch 69 but spaced outwardly therefrom. It will been seen that in, for example, retracting the locking pin 56, the locking pin is turned so as to swing its retaining pin 65 from the inner branch 69 of the groove 66 into the cross part 68 thereof. In this position of the retaining pin 65 the locking pin 56 can be slid axially outwardly until its retaining pin 65 strikes the end of the cross part 68 of the groove 66. When this occurs the locking pin 56 is fully retracted from the opening 58 in the corresponding link 46 but is still retained in the opening 63 by the adjacent plates 40 and 41 and semi-cylindrical side wall 26. The locking pin 56 can then be turned to bring its retaining pin 65 into the outer branch 70 of the U-shaped slot 66, thereby to retain the locking pin 56 in its inoperative position.

In order to permit the half-barrel shaped body to adapt itself to different shapes or conditions of the exterior of the wall of the building, the openings 63 in the plates 40 and 41 and semi-cylindrical wall 26 and through which the locking pins 56 extend are preferably made slightly oversize in a vertical direction as shown in Fig. 11.

In the use of the window jack or support, the user seizes the upper end of the half-barrel shaped body portion 24 through the hand holes 29 with one hand, and seizes the cross rod 50 with his other hand. So held the apparatus can be maneuvered with surprising ease, it being merely necessary to push on the cross rod 50 and pull on the hand hole 29 portion of the body to raise the semi-circular bottom 25 of the body to a vertical position. In this position the body is horizontally disposed and hence its bottom portion can readily be projected through the open window from the inside thereof. In this connection it will be understood that the major parts, particularly the body 24, can be made of aluminum or the like so as to be very light in weight.

So held the body 24 is pushed bottom first through the open window until the rubber sleeves 51 at the projecting ends of the cross rod 50 strike the vertical inside trim pieces 23 of the window casing, this being just above the window sill. The operator then relaxes his pulling pressure on the upper hand hole 29 part of the body 15, this permitting the body to swing downwardly to its vertical position. In so swinging downwardly the rubber strips 42 on the undersides of the overhangs 39 swing into engagement with the top of the exterior window sill and the rubber strips 33 and 35 along the forward edges of the semi-cylindrical side wall 26 and semi-circular bottom 25 swing into engagement with the exterior of the building siding 22.

In this position of the parts the body 24 is in a vertical position and the links 46 are in a horizontal position with their openings 58 in register with the locking pins 56. The operator then turns each locking pin 56 so as to bring its retaining pin 65 into a vertical position, this movement swinging this retaining pin from the outer branch 70 of the U-shaped slot 66 in the top of the block 60 into the cross part 68 of this slot. The operator then pushes in each locking pin, the inner end of the locking pin entering the registering opening 58 of the corresponding link 46 and the retaining pin 65 riding along the corresponding cross part 68 of the U-shaped slot 66 toward the body 24. When each retaining pin 65 reaches the inner end of the cross part 68 of the corresponding U-shaped slot 66, the operator turns the locking pin to swing its retaining pin 65 into the inner branch 69 of the U-shaped slot 66, thereby to retain the locking pin 56 in its operative position.

The operator can then step over the window sill onto the bottom 25 of the body, this bottom being arranged at a convenient height for this purpose. By standing on the bottom 25 the operator is at a convenient height to readily wash the window panes, paint the sash and exterior window trim, putty, or reglaze the sash, or apply storm sash or screens. All tools and materials for the job can readily be placed on the bottom 25 before stepping out of the window and are readily accessible with little danger of falling or loss.

The occupant stands on an imperforate and rigid bottom and is surrounded by the rigid and substantially imperforate semi-cylindrical side wall 26 and the side wall of the building. The body is solidly supported on the window sill and against the side wall of the building. Accordingly, the occupant is not only secure but feels secure in the use of the device. While in the window jack the occupant cannot release the locking pins 56 because of the pressure imposed thereon and hence the security of the device is further increased. At the same time only a fraction of the occupant's weight is impressed against the siding 22 of the building so that there is little danger of marring the same and all parts are protected from marring of the building by rubber strips or facings.

After the window has been cleaned the occupant steps through the open window back into the building and retrieves any tools or materials from the bottom 25. The operator then turns each headed locking pin 56 so as to swing its retaining pin 65 from the inner branch 69 of its U-shaped groove 66 into the central portion 68 thereof. Each locking pin 56 can now be axially retracted, its retaining pin 65 sliding along the central cross part 68 of its U-shaped groove 66 at the end of which the locking pin 56 is turned so as to swing its retaining pin into the outer branch 70 of the U-shaped groove 66 and thereby retain the locking pin 56 in its retracted position. In this movement the inner ends of the locking pins 56 are withdrawn from the openings 58 in the links 46 and hence these links are now free to swing about the cross rod 44.

The operator then grips the cross rod 50 with one hand and reaches out and grips the upper part of the body 24 by means of the hand hold 29. He then pulls the upper part of the body 24 inwardly, this swinging the bottom 25 upwardly and bringing the body to a horizontal position. The body 24 can now be easily withdrawn into the building through the window, and transferred to the next window to be cleaned, repaired or provided with storm sash or screens.

From the foregoing it will be seen that the present invention provides a simple, sturdy and safe window jack which can readily be placed in operative position and removed therefrom, and which greatly facilitates and reduces the hazard of exterior operations around a window.

I claim:

1. A removable window scaffold of the character described, comprising a rigid body having a bottom and a side wall rising from said bottom and fixed thereto, said side wall being provided with an opening at one side, a pair of rigid links pivotally secured to the upper part of said side walls on opposite sides of said opening to swing about a horizontal axis, a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing, and means for locking said links against swinging with reference to said body in the operative position thereof.

2. A removable window scaffold of the character described, comprising a rigid body having a bottom and a side wall rising from said bottom and fixed thereto, said side wall being provided with an opening at one side, a pair of parallel arms fast to the upper part of said wall and projecting outwardly therefrom on opposite sides of said opening near the upper end thereof to overhang the window sill and rest thereon, a pair of rigid links pivotally secured to said overhanging arms on opposite sides of said opening to swing about a horizontal axis, and a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing.

3. A removable window scaffold of the character described, comprising a rigid body having a generally semi-circular sheet metal bottom, a generally semi-cylindrical sheet metal wall rising from said bottom and having its lower edge fixed to the semi-circular edge of said bottom, a pair of parallel arms projecting horizontally outwardly from the upper parts of the vertical edges of said semi-cylindrical wall near the upper end thereof to overhang the window sill and rest thereon, a pair of rigid links pivotally secured to said overhanging arms to swing about a horizontal axis, and a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing.

4. A removable window scaffold of the character described, comprising a rigid body having a generally semi-circular sheet metal bottom, a generally semi-cylindrical sheet metal wall rising from said bottom and having its lower edge fixed to the semi-circular edge of said bottom, said semi-cylindrical wall being formed to provide a pair of integral sheet metal parallel arms projecting outwardly horizontally from the upper parts of the vertical edges of said semi-cylindrical wall to overhang the window sill and rest thereon, a reinforcing plate secured to at least one face of each of said overhanging arms, a cross rod connecting said reinforcing plates and arranged parallel with and above the straight edge of said semi-circular bottom, a pair of rigid links swingably connected to said cross rod to swing about the axis thereof, and a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing.

5. A removable window scaffold of the character described, comprising a rigid body having a bottom and a side wall rising from said bottom and fixed thereto, said side wall being provided with an opening at one side, a pair of parallel arms fast to said wall and projecting outwardly therefrom on opposite sides of said opening near the upper end thereof to overhang the window sill and rest thereon, a pair of links pivotally secured to said overhanging arms on opposite sides of said opening to swing about a horizontal axis generally perpendicular to said overhanging arms, a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing, and means for latching at least one of said links in a generally horizontal position comprising a latching pin slidingly mounted on at least one of said overhanging arms and adapted to project into the path of the corresponding link and adapted to enter an opening in the corresponding link in the horizontal position thereof.

6. A removable window scaffold of the character described, comprising a rigid body having a bottom and a sheet metal side wall rising from said bottom and fixed thereto, said side wall being provided with an opening at one side and said side wall being extended at opposite sides of said opening at the upper end thereof to provide a pair of generally parallel outwardly projecting arms adapted to overhang and rest upon the window sill, a reinforcing plate secured to at least one face of each of said overhanging arms, a pair of links pivotally secured to said reinforcing plates to swing about a horizontal axis along the faces thereof, a lateral extension at the free end of each of said links and adapted to engage the inside of the window casing, and means for latching at least one of said links in a generally horizontal position comprising a block secured to the exterior face of the corresponding overhanging arm and having a horizontal bore registering with an opening through the corresponding reinforcing plate and overhanging arm and arranged generally parallel with the axis of said links, and a latching pin slidingly mounted in said bore and slidable to project into the path of the corresponding link and adapted to enter an opening in the corresponding link in the horizontal position thereof.

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