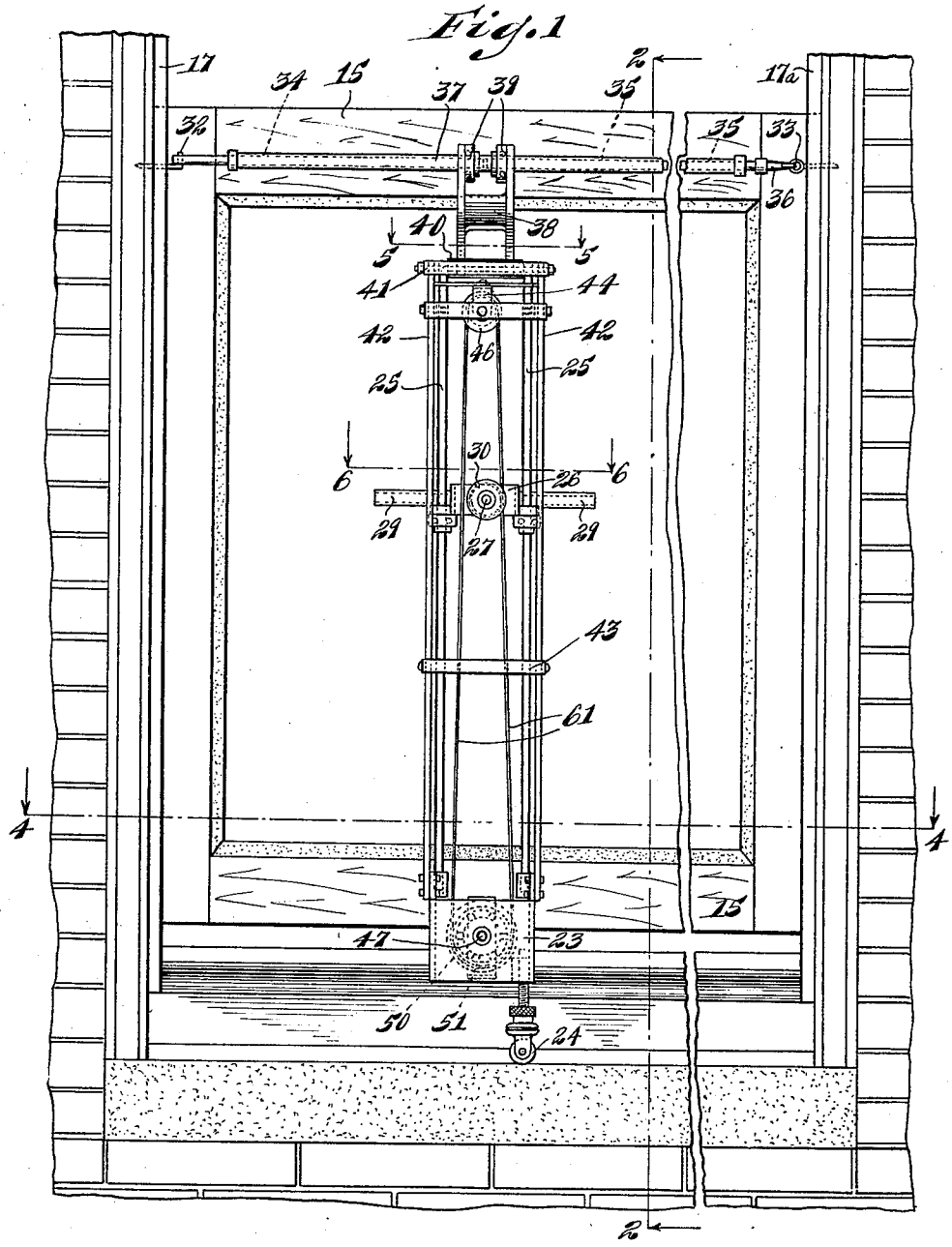
May 28, 1929. J. PATRASZEWSKI 1,714,810

WINDOW WASHING DEVICE

Filed Dec. 10, 1926 4 Sheets-Sheet 1

Fig. 1



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WINDOW WASHING DEVICE

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Fig. 2.

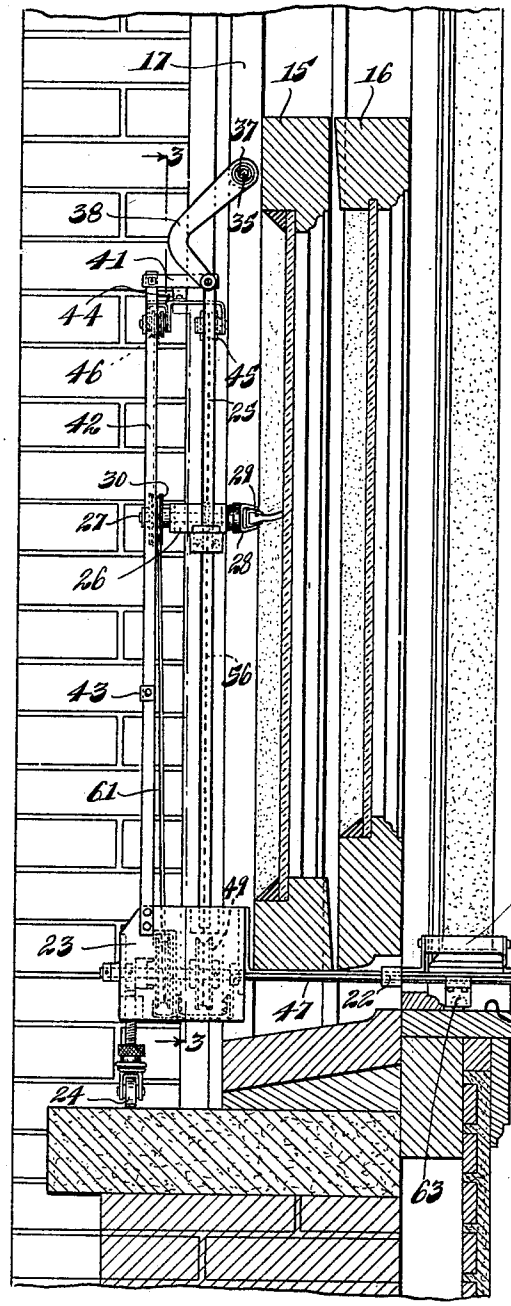
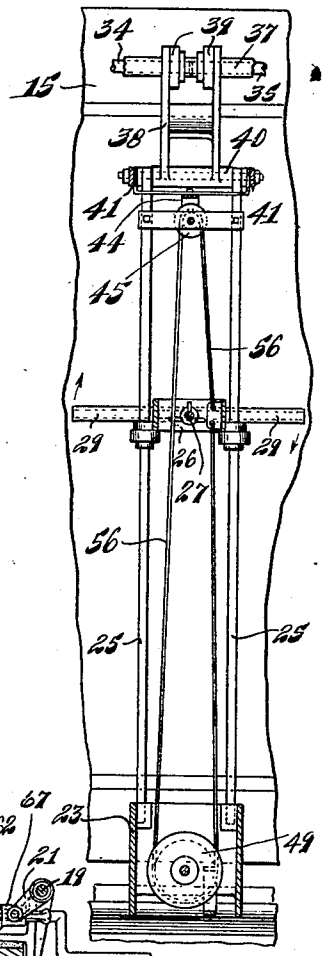


Fig. 3.



Witnesses:
E. E. Wessels
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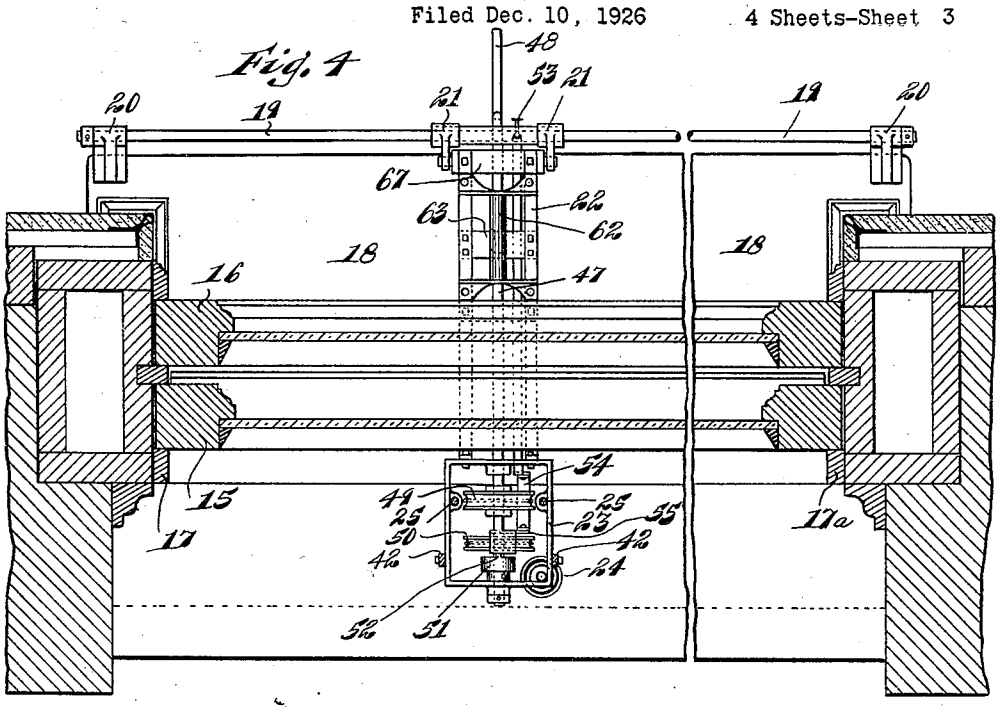
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May 28, 1929. J. PATRASZEWSKI 1,714,810

WINDOW WASHING DEVICE

Filed Dec. 10, 1926 4 Sheets-Sheet 3

Fig. 4



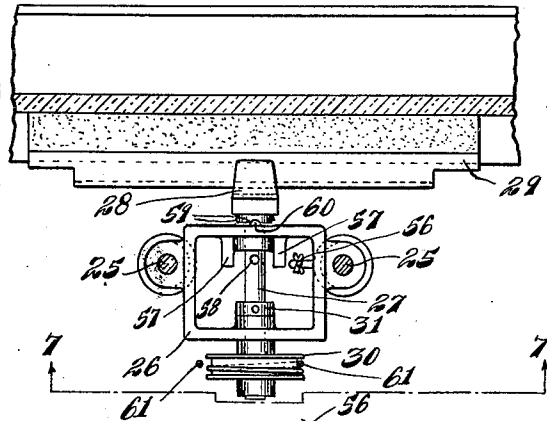


Fig. 6

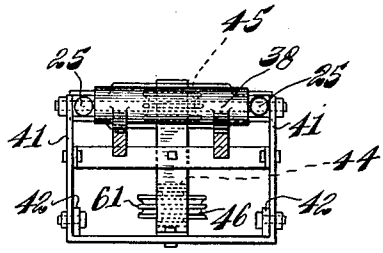


Fig. 5

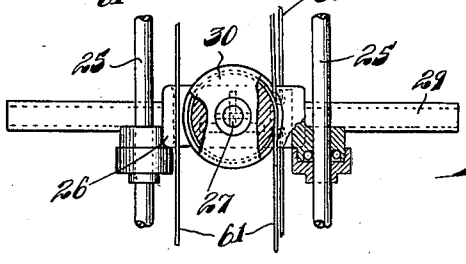


Fig. 7

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WINDOW WASHING DEVICE

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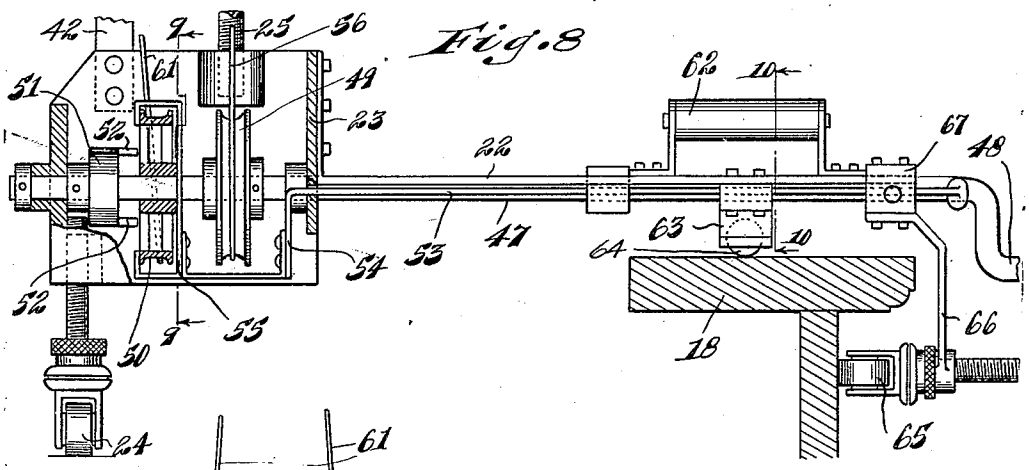


Fig. 8

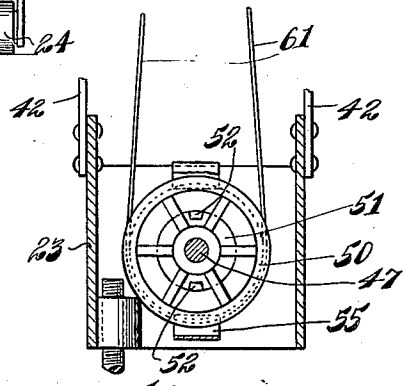


Fig. 9

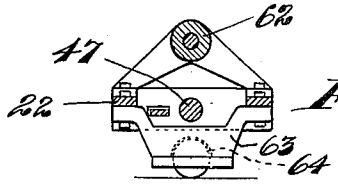


Fig. 10

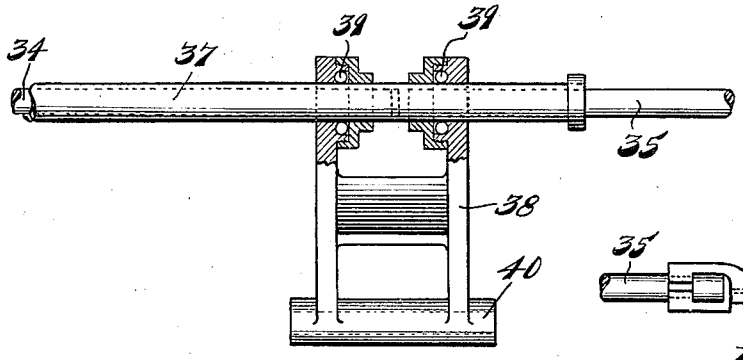


Fig. 11

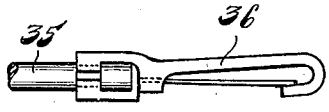


Fig. 12

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UNITED STATES PATENT OFFICE.

JOHN PATRASZEWSKI, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO JOSEPH J. RUSCH, OF CHICAGO, ILLINOIS.

WINDOW-WASHING DEVICE.

Application filed December 10, 1926. Serial No. 153,765.

My invention relates to window washing devices and more particularly to a device adapted to wash windows in office buildings and similar structures.

Windows in such buildings are customarily washed by hand, necessitating the window washer climbing onto the outside sill and holding himself in place by means of a safety belt secured to the window frame. While this method of washing windows produces very satisfactory results, it is highly dangerous and oftentimes the window washer falls to his death through a misstep or the failure of his belt.

The principal object of my invention is to produce a device by means of which the outside of windows may be washed and dried by an operator from within the building.

A further object is to produce a device that is light in weight, which may be easily and quickly attached to the window frame, and which will perform the washing and drying operations as satisfactorily as is now done by a window washer while standing on the outer sill.

These and various other objects and advantages will be more readily understood from the following description and from the accompanying drawings in which

Fig. 1 is an outside view of a window to which my device has been attached,

Fig. 2, a section on line 2—2 on Fig. 1, showing a side elevation of my device,

Fig. 3, a fragmentary section on line 3—3 on Fig. 2, showing the means by which the cleaning implements are moved vertically over the window pane,

Fig. 4, a section on line 4—4 on Fig. 1, showing a plan view of the lower portion of my device,

Fig. 5, an enlarged view taken on line 5—5 on Fig. 1, showing certain details of construction,

Fig. 6, an enlarged view taken on line 6—6 on Fig. 1, and

Fig. 7, a fragmentary outside view partly in section, taken substantially on line 7—7 on Fig. 6. Figs. 6 and 7 show the arrangement of the slidable carriage and the operating ropes.

Fig. 8 is a fragmentary elevation, partly in section, showing the device in the position shown in Fig. 2, but drawn to a larger scale and showing certain modifications,

Fig. 9 is a section on line 9—9 on Fig. 8,

Fig. 10, a section on line 10—10 on Fig. 8, and

Figs. 11 and 12, enlarged fragmentary views of certain details.

Referring now more in detail to the drawings, the device is shown mounted on a window having an upper sash 15, a lower sash 16, jambs 17 and 17ª, and a sill 18.

A rod 19 is clamped to the ends of the inner edge of the sill by means of suitable clamps 20 and has a guide 21 mounted thereon and slidable the entire length of the rod. A base structure 22 is hinged to guide 21 and extends outwardly through the window opening, ending in a hollow frame 23 which is supported by a roller 24 adapted to contact with the outer sill of the window.

A pair of rods 25 are secured to frame 23 and extend upwardly therefrom. A carriage 26 is slidably mounted on rods 25 and has a shaft 27 extending transversely thereof, on one end of which a holder 28 is rigidly secured and which is adapted to carry a squeegee 29, or a sponge. A sheave wheel 30 is rigidly secured to the other end of shaft 27 which is held against outward movement by means of a collar 31 secured to the shaft on the inside of carriage 26. The function of these parts, together with other details, will be later described.

In order to support the upper end of my device, a hook 32 is fastened into window jamb 17, about midway of its height, and an eye 33 secured to jamb 17ª directly opposite. A rod 34, having an eye in one end, by means of which it engages hook 32, extends toward the center of the window and a rod 35, terminating in a snap-hook 36 (Fig. 12) by means of which it is secured to eye 33, extends inwardly from jamb 17ª with the ends of rods 35 and 34 spaced a short distance apart and surrounded by a tubular member 37 which holds the two rods in alignment and with them forms the support for the upper end of the device.

A hanger 38 is mounted on member 37 by means of a pair of ball bearings 39 (see Fig. 11) which allow hanger 38 to move freely on member 37. The lower end of hanger 38 is bent inwardly, terminating in a support 40 to which are connected the upper ends of rods 25. Connected also to support 40 are a pair of struts 41 from the outer end of which a pair of vertical braces 42 extend downwardly

and connect to hollow frame 23. The braces 42 are tied together by means of one or more cross braces 43, as shown in Figs. 1 and 2.

A support 44 is secured near the upper ends of braces 42 and rods 25 and is adapted to rotatably support a sheave 45, approximately in the same plane with rods 25, and a sheave 46, approximately in the plane with braces 42.

A shaft 47 is rotatably mounted in base structure 22 and frame 23 and has its inner end bent to form a handle 48 by which it may be manually rotated. The portion of shaft 47 disposed within frame 23 carries a fixed sheave 49, a loose sheave 50, and a fixed collar 51 which is provided with projections 52. A lever 53 is mounted parallel to shaft 47 and has an offset 54, whereby it may clear sheave 49, and a fork 55 on the outer end of the offset adapted to engage sheave 50 and force same into engagement with the projections 52 on collar 51 so that, when so engaged, rotation of shaft 47 will cause rotation of loose sheave 50.

A cable 56 has one end connected to carriage 26, whence it passes upwardly and over sheave 45, then downwardly and under sheave 49, then upwardly and has its other end connected to carriage 26. As sheave 49 is fixed to shaft 47, it is evident that rotating shaft 47 will cause cable 56, and consequently carriage 26, to move upwardly or downwardly.

At either side of shaft 27 a pair of lugs 57 extend inwardly and are adapted to prevent rotation of shaft 27 more than 45° in either direction by making contact with a pin 58 extending vertically from the shaft. A pair of grooves 59 are formed at right angles to one another in the hub of holder 28 and a round headed pin 60 is inserted in the carriage 26, so that the head of pin 60 is adapted to engage one of the grooves 59, when squeegee 29 is held horizontally by holder 28, and to engage the other groove when the squeegee is vertical.

Referring now more particularly to Fig. 1, 6 and 7, it will be seen that an endless cable 61 connects sheave 30 with loose sheave 50 and upper sheave 46, with one side of the cable making one or more turns around sheave 30 on shaft 27. As previously explained, forcing lever 53 outwardly will bring sheave 50 into engagement with projections 52 on collar 51 so that, by rotating shaft 47, cable 61 will rotate sheave 30 a quarter-turn in either direction when further movement is prevented by lugs 57 and pin 58 and the squeegee held in this position by the head of pin 60 entering groove 59. Holder 28, being normally held in position by the spring action of squeegee 29 holding groove 59 in engagement with the head of pin 60, a slight effort is necessary to start rotation as this arrangement acts in the same manner as a spring ball catch.

In order that the device may be readily moved from side to side of the window, a hand grip 62 is clamped to the upper side of base structure 22 and a roller bearing 63 clamped to its underside beneath the hand grip. A spherical roller 64 is mounted for universal rotation in bearing 63 and is adapted to engage sill 18 and support the inner end of base structure 22, as plainly shown in Figs. 8 and 10. Hand grip 62 and bearing 63 are clamped to base structure 22 so that they may be adjusted for varying conditions.

Assuming that hook 32 and eye 33 have been placed in the window jambs approximately midway of their height, the device would be operated as follows:

The lower sash is raised, rods 34 and 35 secured to hook 32 and eye 33, and the bottom of the device swung outwardly so that roller 24 will rest on the outer sill. Clamps 20, carrying rod 19, are next clamped to the corners of the inner sill, a wet sponge inserted in the holder 28, and both sashes lowered until their bottoms nearly engage base structure 22.

The device is then drawn inwardly until the sponge comes in contact with the glass of the upper sash, shaft 47 rotated to raise holder 28 to the top of the glass, the device moved from side to side of the window by grasping handles 48 and 62, and the sponge gradually lowered by turning handle 48 until the entire surface of the window has been washed. The device is then moved outwardly, a squeegee substituted for the sponge and handle 48 turned to bring the squeegee to its uppermost position.

In case the windows are of such size that hook 32 and eye 33 cannot be so located that squeegee 29 may engage the very uppermost part of the glass while in a horizontal position, lever 53 is shoved outwardly so as to fix sheave 50 to shaft 47 and handle 48 rotated to turn squeegee 29 in a vertical position; after which lever 53 is withdrawn and the squeegee brought to the proper height and moved across the glass, it may then be returned to a horizontal position and the window dried by drawing the squeegee downwardly by the rotation of shaft 47 as previously described.

After the upper sash has been washed and dried, it is raised to its uppermost position and the process repeated with the outer side of the lower sash. It is evident that, when in its upper position, the bottom of the upper sash will overlap the top of the bottom sash due to same being slightly raised to allow the passage of base structure 22. To provide for this contingency, I prefer to notch the corners of squeegee 29 as shown in Fig. 6, so that either end of the squeegee may be inserted between the upper sash and the glass in the lower sash. With this exception, the cleaning operation on the lower sash is similar to that on the upper sash. By referring to Fig. 2, it will be noted that hanger 38 is hook shaped, so that when the device is swung inwardly for the purpose of clean-

ing the lower sash, the lower part of hanger 38 will reach under the bottom of the upper sash with a minimum loss of headroom.

The arrangement shown in Figure 8 is identical with the arrangement shown in the other figures with the exception that rod 19, clamps 20 and guide 21 have been omitted and roller 65 substituted. In this arrangement, the inner end of the device is supported vertically on roller bearing 63 and guided horizontally by a roller 65. This roller is preferably of the caster type and is adjustably supported on a hanger 66, the upper end of which is secured to a bearing 67 clamped on base structure 22 and forming the inner bearing for shaft 47.

While I have illustrated and described a preferred embodiment of my invention, it will be understood that the various parts may be changed without departing from the spirit thereof, and hence, I do not limit myself to the precise construction set forth, but consider that I am at liberty to make such changes and alterations as fairly come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to protect by Letters Patent is—

1. A device for washing windows including a base structure having an upright horizontally adjustable thereon, a carriage slidable on the upright, a pivotally mounted squeegee holder on the carriage, means for reciprocating the said squeegee holder in a vertical plane and for rotatably manipulating same about a horizontal axis, means for raising and lowering the carriage, and means for securing the device to the window to be washed whereby it may be slid from side to side of said window.

2. A device for washing windows including a base structure having an upright thereon, a carriage slidable on the upright, a squeegee holder pivotally mounted on the carriage, manually operable means for giving the squeegee holder a one-quarter turn, means for raising and lowering the carriage, and means for securing the device to the window to be washed whereby it may be slid from side to side of said window.

3. A device for washing windows including a base structure having an upright thereon, a carriage slidable on the upright, a squeegee holder pivotally mounted on the carriage, manually operable means for giving the squeegee holder a one-quarter turn, means for holding the squeegee holder in selected positions, means for raising and lowering the carriage, and means for securing the device to the window to be washed whereby it may be slid from side to side of said window.

4. A device for washing windows including a base structure having an upright horizontally adjustable thereon, a carriage slidable on the upright, a pivotally mounted squeegee holder on the carriage, means for reciprocating the said squeegee holder in a vertical plane and for rotatably manipulating same about a horizontal axis, means for slidably mounting the device on the frame of a window to be washed, a shaft in the base structure, a pulley on the shaft, a pulley rotatable on the top of the upright, and a cable engaging the pulleys and secured to the carriage whereby rotating the shaft will raise and lower the carriage.

5. A device for washing windows including a base structure having an upright thereon, a carriage slidable on the upright, a pivotally mounted squeegee holder on the carriage, means for slidably mounting the device on the frame of a window to be washed, a shaft in the base structure, means associated with the shaft for raising and lowering the carriage, a pulley rotatable on the shaft, a collar fixed to said shaft, a second pulley secured to the upper part of the upright, a third pulley connected to the squeegee holder, a cable connecting the pulleys, and means for locking the first mentioned pulley to the collar whereby rotation of the shaft will cause the squeegee holder to turn.

6. A device for washing windows including a base structure having an upright horizontally adjustable thereon, a carriage slidable on the upright, a squeegee holder on the carriage, means for raising and lowering the carriage and for simultaneously turning the squeegee holder when desired, means for moving the device outwardly and inwardly for washing the upper and lower sashes, and means for so securing the device to the window frame that it may be moved from side to side of said frame.

7. A device for washing windows including a lower guide secured to the sill of the frame, a base structure slidable on guide, rollers engaging the sill and supporting the base structure, an upright horizontally adjustable on the base structure, an upper guide between the joints of the frame, a hanger slidable on the upper guide and secured to the upright, a carriage slidable on the upright, means to raise and lower the carriage, and means for simultaneously manipulating the squeegee holder while the carriage is being raised and lowered.

8. A device for washing windows including a base structure having an upright thereon, a carriage slidable on the upright, a pivotally mounted squeegee holder on the carriage, said squeegee holder being optionally adjustable in a vertical plane and about a horizontal axis, means to rotate said squeegee holder when desired, and to simultaneously raise and lower said carriage therewith, and means for securing the device to the frame of the window to be washed whereby it may be slid from side to side.

9. A device for washing windows, includ-

ing a base structure having an upright thereon, a carriage slidable on the upright, a pivotally mounted squeegee holder adjustable on the carriage, said squeegee holder being optionally adjustable in a vertical plane and about a horizontal axis, means optionally engageable for simultaneously manipulating said squeegee holder and for raising and lowering the carriage and means for securing the device to the frame of the window to be washed whereby it may be slid from side to side of said window.

In testimony whereof, I hereunto set my hand this 6th day of December, A. D. 1926.

JOHN PATRASZEWSKI.