

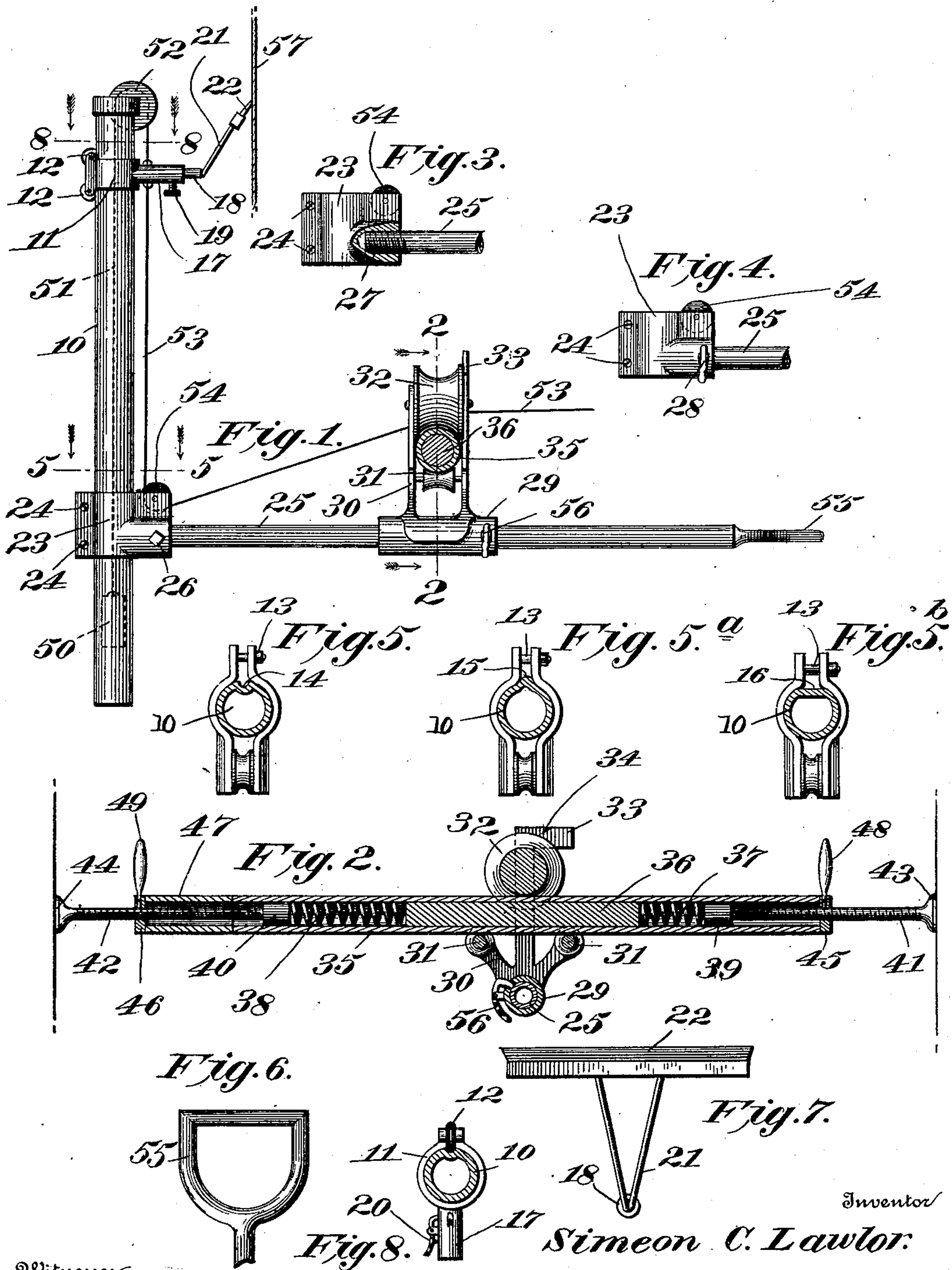
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S. C. LAWLOR.
MACHINE FOR WASHING WINDOWS.

(Application filed June 26, 1900.)

(No Model.)



Witnesses

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MACHINE FOR WASHING WINDOWS.

SPECIFICATION forming part of Letters Patent No. 669,419, dated March 5, 1901.

Application filed June 26, 1900. Serial No. 21,699. (No model.)

To all whom it may concern:

Be it known that I, SIMEON C. LAWLOR, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Machines for Washing Windows; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in window-cleaners, and particularly to that class of such devices by means of which the outer surfaces of the window may be cleaned by a person operating inside of the house, whereby the exposure and danger of falling from the window-sill are avoided, the object of the invention being to provide an improved device of this class by which the desired operations may be performed in the least possible time and with the least possible expenditure of labor.

With this object in view the invention consists in an improved window-cleaner of the class mentioned, the construction, arrangement, and combination of the parts of which will be hereinafter fully described and afterward specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a window-cleaner constructed in accordance with my invention, the horizontal hollow supporting rod or tube and a portion of the window-pane being shown in vertical section. Fig. 2 is a vertical sectional view taken on the plane indicated by the dotted line 2 2 of Fig. 1. Fig. 3 is a detail view, in side elevation, of the frame or coupling for connecting the vertical standard with the horizontal supporting rod or tube, a portion of the horizontal rod being shown threaded into the frame. Fig. 4 is a similar view, the horizontal rod or tube being secured in the frame by a spring or catch. Fig. 5 is a detail sectional view on the broken line 5 5 of Fig. 1, the vertical tubular standard being shown as provided with a longitudinal groove in one side. Fig. 5^a is a similar view, the vertical tubular standard being provided with a rib instead of a groove. Fig. 5^b is a similar

view, the vertical hollow standard being flattened on one side instead of being ribbed or grooved. Fig. 6 is a top plan view of the inner or handle end of the horizontal supporting-bar. Fig. 7 is a detail view in elevation of the window-cleaning brush. Fig. 8 is a sectional view on the broken line 8 8 of Fig. 1 looking downwardly, as indicated by the arrows.

Like numerals mark the same parts wherever they occur in more than one figure of the drawings.

Referring to the drawings by numerals, 10 indicates a hollow vertical standard or tubular column upon which is mounted to slide vertically a sleeve 11, provided with antifric-tion and guide rollers 12, mounted on bolts 13, which also serve to hold the two sides of the sleeve 11 in position to fit upon the standard 10. These rollers 12 may be formed on their peripheries to fit into or against either a longitudinal groove 14 or a longitudinal rib 15 or a flat side 16 of the vertical standard, as shown, respectively, in Figs. 5, 5^a, and 5^b. Projecting laterally from that side of sleeve 11 opposite to the rollers 12 is a horizontal tube 17, in which is secured a smaller tube 18 by means of a set-screw 19, as in Fig. 1, or a spring-catch 20, as in Fig. 8. Projecting from the smaller tube 18 are spring-wires 21, which carry at their outer ends a suitable window-cleaning brush 22, in this instance shown in the well-known form of the rubber window-cleaner.

23 indicates a sleeve or coupling secured by means of clamp-screws 24 upon the lower portion of the vertical frame 10, in which is secured a horizontal supporting rod or tube 25 by means of a set-screw 26, as shown in Fig. 1, or by threading it into the sleeve or coupling, as at 27 in Fig. 3, or by means of a spring-catch 28, as in Fig. 4. Adjustably mounted to slide upon the horizontal supporting rod or tube 25 is a collar 29, upon which is formed or mounted a carriage 30, carrying rollers 31 and 32 and extended upwardly, as at 33, the extension being formed with a nick 34, as shown in Fig. 2. The carriage 30 is mounted to slide laterally of the window-pane and horizontal tube 35, held in position between the

sides of the window-frame in the manner hereinafter described, the grooved rollers 31 bearing upon the lower face of said tube and the roller 32 upon the upper face thereof.

5 Within the tube 35 is a central plug 36, against each end of which is placed a spiral spring, as at 37 and 38, normally pressing outward against the enlarged heads or inner ends 39 and 40 of screws 41 and 42, which are provided on their outer ends with suitable pads or heads 43 and 44 to bear against the inner faces of the sides of the window-frame. Upon these screws are milled or plain nuts 45 46, which when the screws 41 and 42 are pressed

15 outward by the springs 37 and 38 into contact with the window-frame are turned up tight against the ends of the tube 25 or of a lengthening-sleeve 47, said nuts being turned by any suitable means, preferably by small bars or marline spikes 48 49, fitting into radially-arranged holes provided in the periphery of the nuts.

In dotted lines at 50 in Fig. 1 is shown a weight suspended by a cord 51, which passes

25 up over a pulley 52, journaled in the upper end of the standard 10, and downward again, its end being secured in any suitable manner to the top of the tube 17. To the bottom of the tube 17 is secured a cord 53, which passes

30 downward under a pulley 54, mounted in the frame or coupling 23, and thence inward to the carriage 30, where its outer end may be secured in the nick 34 or any other suitable clamp when desired. The horizontal tube or

35 rod 25 may be provided with any suitable shape of handle, as shown at 55 in Figs. 1 and 6, and the sleeve 29 may be secured in any position on said rod or tube 25 by means of a spring-catch 56, as shown in Figs. 1 and 2, or

40 by means of a set-screw, if desired.

In the operation of my invention the tube 36 is placed in position between the sides of the window-frame, with the other parts mounted thereon, and secured in such position by

45 means of the springs 37 and 38 and nuts 45 and 46, as before described. In this position the collar 29 and its carriage, together with the horizontal tube or bar 25, the vertical standard 10, and all other parts of the device,

50 are free to be moved laterally on the tube 36, and this lateral movement of the standard 10 carries with it the brush-cleaner 22, held normally in contact with the window-pane 57 by means of the spring-wires 21. This provides

55 for bringing the brush into contact with all parts of the width of the window-pane, and while in any of these positions, the vertical standard 10 being outside the window-frame and the handle 55 inside, the brush 22 may

60 be reciprocated vertically in contact with the window-pane by drawing outward on the cord 53 to draw said brush downward, and by the weight 50, through the cord 51, drawing the brush upward. By means of this double or

65 lateral and vertical movement all parts of the outside of the window-pane may be reached by the brush.

The provision of the top and bottom friction-rollers on the sleeve 11 to run in contact with either the groove or rib or flat side of the vertical standard assures the more easy reciprocation of the sleeve 11 on the standard 10 and prevents the frame from sticking or cramping, to which it is liable when provided with a single roller. The provision of the

75 sleeve or coupling 23 renders the vertical standard 10 adjustable with relation to the horizontal tube or bar 25 and the tube or bar 25 removable at will. The provision of the carriage 30, with its triple rollers, renders

80 the movement of the operative parts laterally on the fixed tube 36 much more easy and free from interruption by sticking or cramping. The provision of the adjusting collar or sleeve

85 17 amounts to an extension of the supporting-tube 36, thus permitting the carriage 30 to be moved much nearer to the sides of a wide window-frame than would be possible without them.

Having thus fully described my invention, 90 what I claim as new, and desire to secure by Letters Patent, is—

1. In a window-cleaner, the combination with a vertical standard carrying the window-cleaning brush, of a tube adapted to be fixed

95 between the sides of the window-frame, a horizontal tube or bar, a carriage carried thereon and slidably fitted upon the fixed tube, and a coupling adjustably clamped upon the vertical standard and provided with means for

100 removably securing the horizontal rod or tube, substantially as described.

2. A window-cleaner comprising a laterally-adjustable horizontal tube or bar, a vertical standard carrying the cleaning-brush, and a

105 coupling adjustably fixed upon the vertical standard and provided with means for removably receiving and holding said horizontal bar or tube, substantially as described.

3. In a window-cleaner, the combination

110 with a hollow vertical standard provided with a pulley at its upper end, of a brush-holding sleeve inclosing and slidably mounted upon said standard, a support adapted to be secured in a window-frame, a coupling secured

115 to said support and adjustably attached to the vertical standard near its lower end for holding the same in place, the said standard carrying a pulley, a weight in the vertical standard, a cord secured to the weight and

120 passing out over the upper pulley and having its ends secured to the brush-carrying sleeve, and a cord secured to the brush-carrying sleeve and passing under the pulley on the clamp, substantially as described.

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4. In a window-cleaner, a vertical hollow standard, a sleeve slidably mounted thereon, two pulleys journaled in the slidable sleeve at the top and bottom thereof respectively and bearing against the vertical standard, a

130 horizontal tube projecting from the opposite side of the slidable sleeve, a second tube telescoping into the first and removably secured therein, spring-wires secured in the last-

named tube, and a window-cleaning brush mounted upon the said spring-wires, whereby said brush is held normally in contact with the window-pane during the sliding of the sleeve on the vertical standard, substantially as described.

5. In a window-cleaner, the combination, of a vertical hollow standard, a sleeve slidably mounted thereon carrying a window-cleaning brush, means for moving said sleeve upward, a coupling embracing the vertical standard, clamping screws or bolts for adjustably securing the coupling on the standard, a socket on one side of the standard, a horizontal tube or rod secured in said socket, a pulley journaled upon the coupling, and a cord connected with the slidable brush-sleeve and passing downward under said pulley, substantially as and for the purpose set forth.

6. In a window-cleaner, the combination with a tube adapted to be fixed in position between the sides of the window-frame, a horizontal tube or rod at right angles to the tube above mentioned, a window-cleaning device supported upon said horizontal tube or rod, a sleeve mounted upon said horizontal tube or rod, a carriage carried by said sleeve, two rollers journaled on said carriage and bearing against the under side of the fixed tube, and a third roller carried by said carriage and

bearing against the upper face of said fixed tube, substantially as described.

7. In a window-cleaner, a tube adapted to be fixed in position between the sides of a window-frame, a carriage adapted to travel on said tube, a sleeve suspended from said carriage, and a window-washing device carried by said sleeve, substantially as described.

8. In a window-washer, the combination with a tube, having a plug in its central portion, of springs in the tube bearing against each end of said plug, screws slidably mounted in the ends of the tube and provided with enlarged inner ends bearing against the outer ends of said springs, nuts on said screws adapted to bear against the outer end of said tube, heads or caps on the outer ends of the screws adapted to bear against the inner faces of the sides of the window-frame, and removable collars adapted to embrace said screws between the ends of the tube and the nuts to form continuations of the tube, substantially as described.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

SIMEON C. LAWLOR.

Witnesses:

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