No. 699,042. Patented Apr. 29, 1902.

J. VAIN.

WINDOW WASHER.

(Application filed May 23, 1901.)

(No Model.)

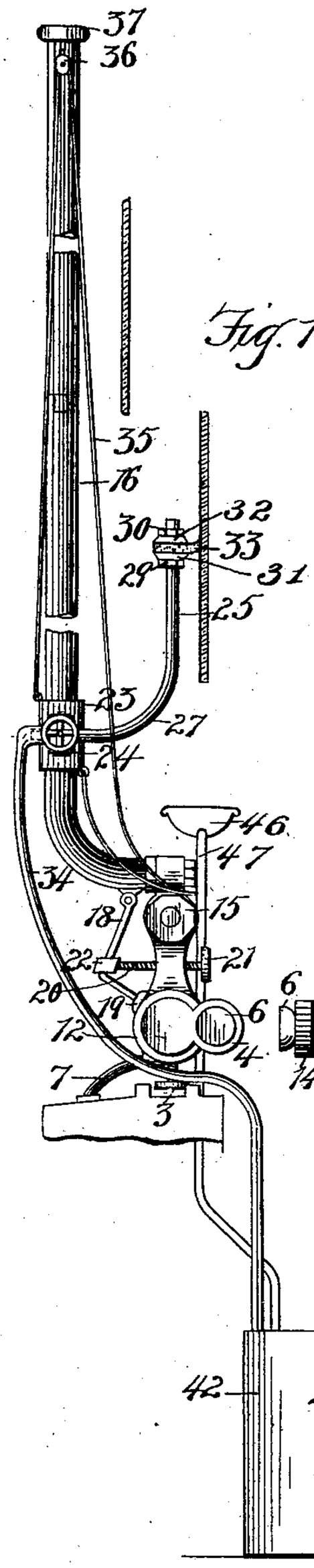


Fig. 1.

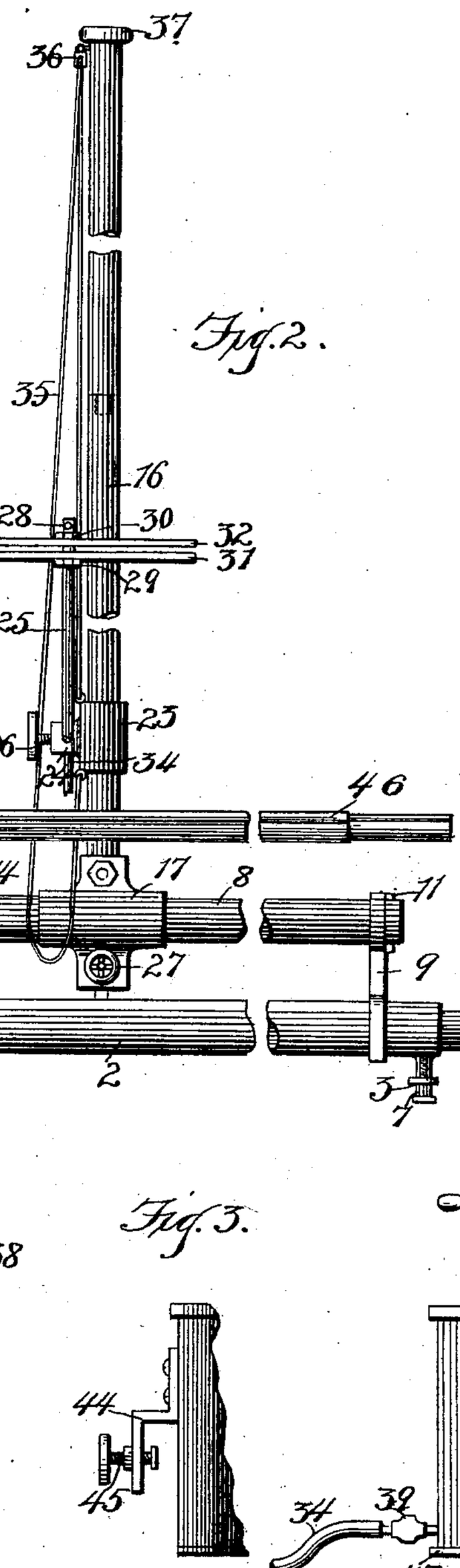


Fig. 2.

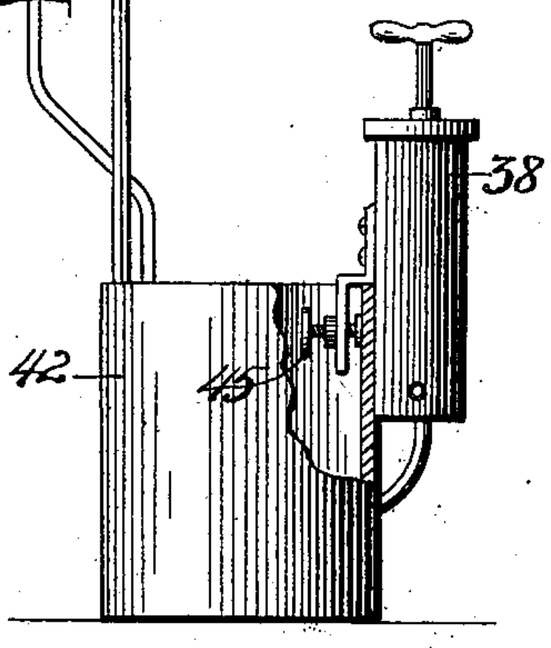
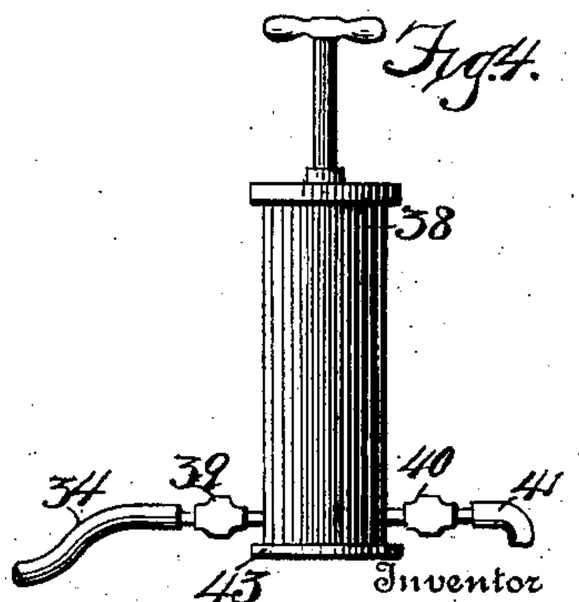


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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WINDOW-WASHER.

SPECIFICATION forming part of Letters Patent No. 699,042, dated April 29, 1902.

Application filed May 23, 1901. Serial No. 61,615. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH VAIN, 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 Window-Washers; 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-washing apparatus, and more particularly to such devices adapted to clean the outside of a window and be operated by a person on the inside.

It consists of a transverse rod, means for securing the same between the vertical sides of a window-casing, a vertical rod supported thereby and movable thereon, and means carried by said vertical rod and operable from within for cleaning a window from the outside.

It also consists in certain other novel constructions, arrangements, and combinations of parts, as will be hereinafter more fully described and specifically claimed.

In the accompanying drawings, Figure 1 represents a side elevation of a window-washer embodying the features of my invention. Fig. 2 represents a front elevation of the same, the water-supply tank being omitted; and Figs. 3 and 4 represent fragmentary detail views of the pump utilized for supplying water.

Referring to the drawings by numerals, 1 indicates a preferably hollowed shaft or rod adapted to receive a telescoping rod 2. A thumb-nut, as 3, provided with a suitable screw, is preferably threaded through the telescoping end of the rod 2, whereby the rods 1 and 2 may be rigidly secured together. The free ends of rods 1 and 2 are preferably formed with angle portions 4 4, through which are threaded bolts 5 5, provided with suitable thumb nuts or heads on their inner ends and preferably hard-rubber caps, as 6 6, on their outer ends, whereby the said rods may be caused to firmly engage the opposite vertical casing of a window. Any suitable leg or other support, as 7, may be secured to rod 2 for steadying the same.

Spaced above rod 2 is preferably arranged a suitable hollow rod or shaft 8, which is supported upon said rod 2 by means of a bifurcated arm 9 at one end and a suitable cross-head 10 at the other end. The bifurcated end of arm 9 is adapted to rest upon shaft 2, while an eye in the upper end of said arm surrounds the end of rod 8 and is prevented from accidental removal by means of any suitable key 11. The cross-head 10 is provided with a lower sleeve, as 12, slidably surrounding rod 2, an upper sleeve 13, surrounding rod 8, and an intermediate connecting-web. The sleeve 13 abuts against a shoulder, as 14, formed upon rod 8, and is retained against longitudinal movement or accidental removal by means of a suitable nut, as 15, threaded upon the end of said rod 8.

A vertically-arranged preferably hollow shaft or rod, as 16, is preferably secured to rod 8 by means of a suitable sleeve, as 17, which sleeve is free to slide longitudinally of said rod 8. The rod 16 is preferably secured to sleeve 17 by having its lower ends passed through an eye in a suitable flange upon the said sleeve and a nut threaded on the outer end thereof. A spring, as 18, is preferably pivotally connected near the lower end of rod 16 and is provided at its lower end with a suitable foot, as 19, adapted to rest upon rod 2, and thereby assist in the support of said rod 16, the said foot partially surrounding rod 2 and the weight of rod 16 assisting in retaining said foot in contact with said rod 2. A bolt, as 20, is preferably threaded through a suitable flange extending from sleeve 17 and is formed with an operating-head, as 21, and any preferred attaching means at the opposite end of the head, as at 22, for securing the same to said spring 18, whereby rotation of the said bolt will press outwardly that portion of spring 18 to which attaching means 22 is secured, thus lowering the upper end of said spring, thereby altering the degree of incline of rod 16.

A suitable sleeve, as 23, is adapted to ride upon rod 16 and is provided with a laterally-extending flange, as 24, apertured centrally thereof for receiving a tube, as 25, passed therethrough. A thumb-screw, as 26, is threaded through the outer edge of flange 24

and into contact with tube 25, whereby the same may be locked against movement. The tube 25 is provided with a suitable curve, as at 27, whereby its upper end will the more readily assume a position contiguous to the window-pane when vertical rod 16 is in position. The upper end of tube 27 is closed, and the side wall thereof is apertured, as at 28. The said upper end is also threaded and provided with upper and lower nuts, as 29 and 30, with interposed clamping members, as 31 and 32, which clamping members may be of any desired length, size, or contour and which are adapted to retain between them a suitable cleaning instrument or rubber, as 33. The lower end of tube 25 is open and adapted to receive a rubber or other elastic tube, as 34, which leads to a suitable water-supply. The sleeve 23, carrying tube 25, is adapted to be reciprocated upon rod 16 by means of an endless cord or other suitable flexible support, as 35, which is secured to said sleeve 23 and passes about a tackle-block or suitable pulley, as 36, near the upper end of rod 16, whereby a pull upon cord 35 will raise sleeve 23 and a pull in the opposite direction will lower the same.

In the construction of tube 16 I find for the convenience of packing and storage that the same is best made with two parts and threaded together, as seen in dotted lines in Figs. 1 and 2. At the extreme upper end of said tube 16 I preferably provide a soft-rubber cap or other suitable cushion, as 37, which prevents danger of breaking the glass of a window when said rod is brought in contact therewith.

For the convenience of supplying water to the cleaning instrument 33 I provide a suitable pump, as 38, to which tube 34 is connected through the medium of a suitable check-valve 39. Opposite valve 39 is arranged a similar valve 40, which leads into pump 38 and is connected with a tubing 41 for supplying water to said pump 38 from a suitable supply tank or bucket, as 42. In the embodiment of pump shown in Fig. 4 I provide a flange, as 43, at the base thereof for supporting the same; but I find it convenient at times to secure pump 38 directly to the supply tank or bucket, and in such case the flange 43 is omitted and an angular extension, as 44, is secured to the side of said pump and is provided with a portion parallel to the wall of the pump and spaced therefrom. A suitable thumb-screw, as 45, is preferably threaded through such parallel portions and is adapted to clamp the wall of a bucket or supply-tank, whereby said pump 38 will be supported.

In operation after rods 1 and 2 have been positioned between the vertical sides of the window-casing the rod 16 is free to move the length of rod 8 through the medium of sleeve 16, and also the length of rod 2 by means of sleeve 12, whereby the entire width of the window may be traversed by cleaning instrument 33. The operator needs only to stroke the piston of pump 38, when a supply of water will be thrown from aperture 28 in the upper end of rod 25 and fall upon cleaning instrument 33, which is then in condition for operation and which is adapted to be operated, as heretofore stated, through the medium of cord 35.

It will be obvious that a great advantage is secured by providing curve 27 in tube 25, for, as will be readily seen, when the lower sash is raised to permit the application of my improved window-washer a portion of the lower pane will pass on the inside of the upper pane and the cleaning instrument 33 will be permitted to pass beyond the lower rail of the upper sash by virtue of curve 27.

Although I have described specifically one particular embodiment of the present invention, it will of course be understood that I do not mean thereby to limit myself to the exact form specified, but shall feel at liberty to alter the shape, size, and minor details of the device within the spirit and scope of the invention.

In operating my invention I find it preferable to provide means for receiving the drip of the water used during the cleaning process, and for this purpose I utilize a telescoping trough, as 46, supported in a suitable manner and carrying at one end a suitable tube for directing the said drip back to the supply-bucket 42.

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

1. A window-washing apparatus, comprising in its construction a rod, a tube telescoping thereupon, means for securing the free ends of said rod and tube against the vertical sides of a window-casing, a rod slidably secured above said tube and arranged parallel therewith, a vertically-arranged rod slidably secured to said parallel rod, a sleeve slidably secured to said vertical rod, a cleaning instrument carried by said sleeve, and means for reciprocating said cleaning instrument, substantially as described.

2. A window-washing apparatus, comprising a telescoping support, a horizontal rod slidably secured to said support and spaced above the same, a normally vertically arranged rod slidably carried by the horizontal rod, means for swinging the last-mentioned rod out of its vertical plane, and window-cleaning means carried by said vertical rod, substantially as described.

3. A window-washing apparatus comprising in its construction a longitudinally-adjustable rod adapted to be secured between the vertical sides of a window-casing, a sleeve slidable thereon, a rod spaced therefrom and extending parallel therewith, a sleeve rigidly secured about one end of said parallel rod, a web securing said rigid sleeve to said sliding sleeve, means supporting the free end of said parallel rod above said adjustable rod, a sleeve slidable upon said parallel rod, a vertical rod secured to said last-mentioned sleeve,

means carried by said vertical rod for cleaning a window on the outside, a cushion secured to the upper end of said vertical rod, and auxiliary means for supporting said adjustable rod, substantially as described.

4. A window-washer comprising in its construction a rod adapted to be secured between the vertical sides of a window-casing, a rod slidably secured above said first-mentioned rod and extending parallel thereto, a sleeve longitudinally slidable upon said parallel rod, a vertically-arranged rod secured to said sleeve, means carried by said vertical rod for cleaning the outside of a window, and auxiliary means for supporting said vertical rod, comprising a spring pivoted near the lower end thereof, a foot upon the lower end of said spring adapted to normally rest upon said securing-rod, a bolt threaded through a flange extending from said sleeve, means for securing one end of said bolt to said spring, and means for rotating said bolt, whereby the pivoted end of said spring may be raised or lowered for tilting said vertical rod laterally, substantially as described.

5. A window-washer comprising in its construction a rod adapted to be supported vertically on the outside of a window, a telescoping support for said rod, a sleeve slidable upon said rod, means for reciprocating said sleeve, a tube carried by said sleeve, and carrying a cleaning instrument at its upper end, means for supplying water to the lower end of said tube, means for throwing water from said tube against the glass operated upon, a telescoping trough beneath said glass for receiving the drip therefrom, and means for conducting said drip from the trough back to the source of supply, substantially as described.

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

JOSEPH VAIN.

Witnesses:

JAMES T. WATSON,

PHINEAS AYER.