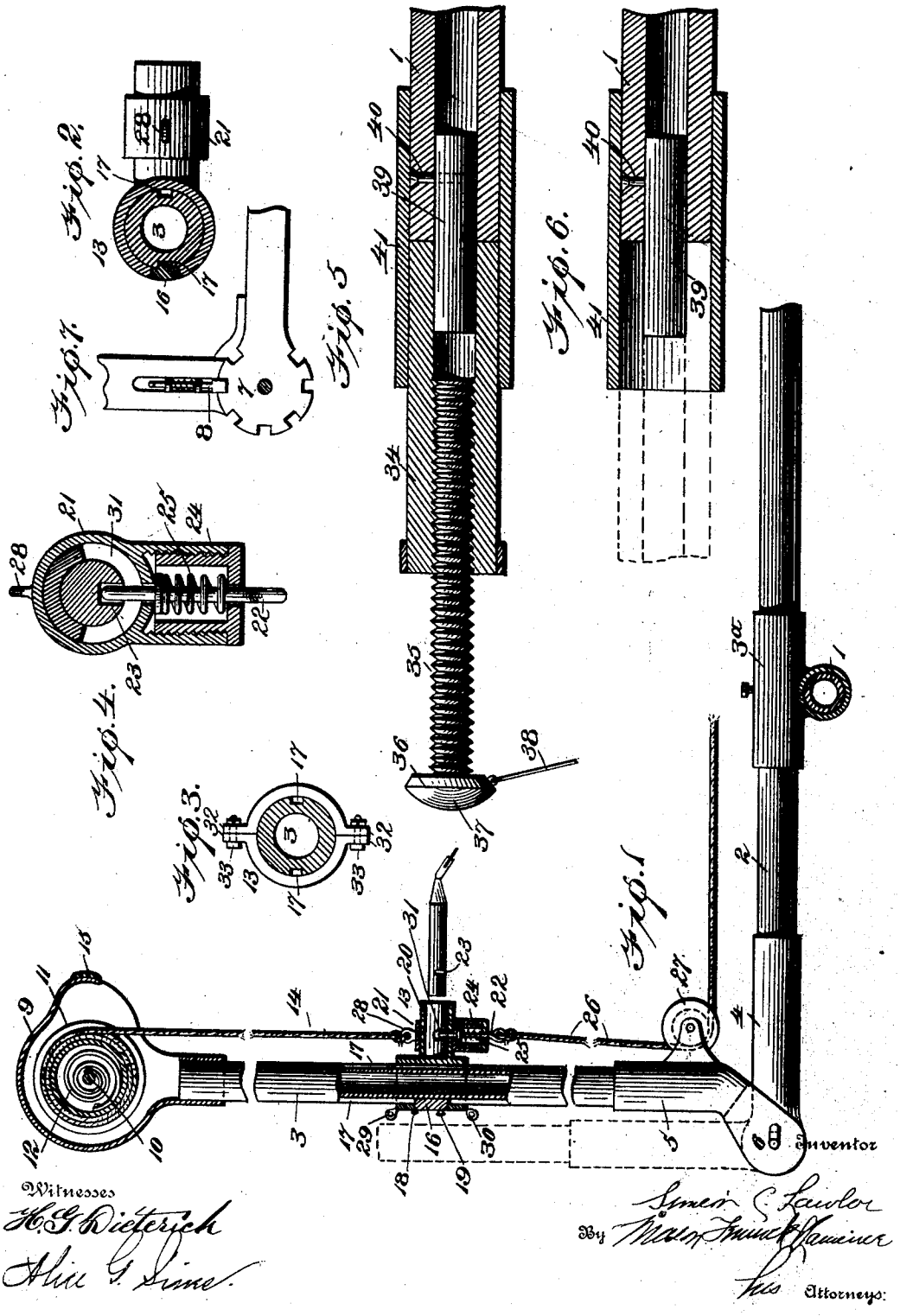
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S. C. LAWLOR.

WINDOW CLEANING APPARATUS.

(Application filed July 24, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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WINDOW-CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 716,442, dated December 23, 1902.

Application filed July 24, 1901. Serial No. 69,549. (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 Window-Cleaning Apparatus; 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.

My invention relates to improvements in apparatus for washing windows, and especially to apparatus which is adapted for washing the outside of windows from the inside of a room or building; and it consists in a window-washer having a handle-bar adapted to be movably mounted in a window-frame, a standard pivoted to its outer end, an implement-carrying sleeve movably mounted on the standard, a head carried by the standard, and a spring-actuated drum or pulley mounted in the said head and connected with the sleeve for normally pulling the sleeve upwardly, together with means for pulling the sleeve down against the action of the said drum for reciprocating the washing implement.

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

Figure 1 is a side elevation of my improved window-washer, a portion of the same being broken away and shown in section to better reveal the construction of the parts. Fig. 2 is a detail sectional view through the standard of the washer looking down upon the movable sleeve mounted thereon. Fig. 3 is a detail sectional view similar to Fig. 2, but showing an adjustable means of securing the collar to the sleeve upon the standard. Fig. 4 is an enlarged detail sectional view through the latch mechanism employed for securing the washing-tools to the movable sleeve. Fig. 5 is a detail sectional view through one end of the rod or bar for supporting the window-washer in place in the window-frame. Fig. 6 is a similar detail sectional view of the said rod, showing the same as separated for the reception of a lengthening-section. Fig. 7 is a detail view of a joint interposed between the handle-bar of the washer and the standard thereof.

The present invention is designed to supply a window-washer which can be made in a light and inexpensive manner, and yet which will be capable of washing the outside and the inside of a window from the interior of a room or building, and it is made up of a supporting-bar 1, adapted to be secured in the window-frame, a handle-bar 2, movably mounted thereon, and a vertical standard 3, carried by the said handle-bar. The handle-bar may be made of wood or other light material for the greater part of its length, being provided with a metallic sleeve 3^a, adjustably secured thereto, for holding the bar movably on the supporting-rod 1, and an end metallic socket, as 4, to which a metallic socket 5 at the lower end of the standard 3 is pivoted. The socket 5 is connected with the socket 4 by any suitable adjustable joint, as at 6. I preferably employ at this point, however, a joint such as that shown at a similar point upon an apparatus claimed and described by me in an application for a patent, Serial No. 60,379, filed May 15, 1901. I may, however, employ at this point a joint like that shown in Fig. 7 of the drawings, in which one member carries a notched disk, as 7, which is engaged by a spring-operated latch 8, carried by the other member. The standard 3 may be formed of a wooden rod carried by the socket 5 or may be made of a hollow tube or other light material, as may be preferred. The upper end of the said standard 3 carries an enlarged head-housing, as 9, in which is journaled upon a horizontal pin or shaft 10 a flanged pulley or drum 11. The said drum is preferably hollow, and a flat coil-spring, as 12, is arranged therein, similar to a clock-spring, one end of said spring being attached to the inner periphery of the said drum or pulley, while the other end thereof is secured to the journal shaft or pin 10 of the pulley. The housing 9 is preferably closed, except at the front lower portion thereof. An implement-carrying sleeve, as 13, is movably mounted on the standard 3 and connected, by means of a cord 14, with the said pulley or drum 11. The spring of the said drum is adapted to wind up the said cord thereon for normally raising

the sleeve of the said standard. The housing 9 is preferably formed with a rubber or other soft or elastic buffer, as 15, on its most forwardly projecting portion, so that if the washer should be accidentally thrown against a pane of glass in a window it would not break the same. The sleeve 13 fits loosely on the standard 3 and is preferably formed with a spline 16, which may be brought into engagement with grooves 17, formed in the standard 3. The said grooves 17 are preferably diametrically opposite to each other, so that when the outside of a window is being washed the sleeve may be arranged in the manner shown in Fig. 1, the spline 16 then engaging the groove 17 on the outer side of the standard. By removing the spline 16 from the said groove the sleeve may be turned on the said standard until the window-washing tool carried thereby projects in a diametrically opposite direction from the direction shown in Fig. 1. In this position the spline 16 will engage a groove 17 on the inner side of the standard 3. In order to make the spline 16 easily adjustable, it is hinged, as at 18, to the sleeve 13 and is provided with a knob or handle 19, by which it may be drawn out of the groove in the standard 3. By lifting the spline upon its pivotal point the sleeve will be released from one groove and may be turned in the opposite direction. The sleeve 13 is formed with a laterally-projecting hollow slot, as 20, adapted to receive the ends of window-washing implements. A sleeve, as 21, surrounds the said projection and is formed with a spring-actuated latch-pin 22, which not only holds the sleeve in position on said projection, but is adapted to engage apertures 23 in the stems of window-washing implements for holding them in place in said socket. The latch-pin 22 finds bearings in a projecting casing 24, extending from the sleeve 21. A coil-spring 25 in said casing normally holds the bolt in its upper locked position. The lower end of said bolt or pin 22 is formed with an eye, to which is attached an operating-cord 26 for pulling the sleeve downwardly. The cord passes around a pulley 27, secured to the socket 5, and thence to a point within easy reach for the operator of the device. The cord 14 for lifting the sliding sleeve on the standard is attached to an eye 28 on the sleeve 21. When the position of the sliding sleeve carrying the implements for washing windows is reversed on the said standard, the cords 14 and 26 are attached, respectively, to eyes 29 and 30, formed on the sliding sleeve 13. Where the bolt 22 passes through the projecting socket 20, an elongated slot, as 31, extending peripherally of said socket, is formed. The extent of this slot 31 can be readily seen by reference to Fig. 4 in the drawings. By the use of this slot the washing implement instead of being started in a downward direction on the window-pane in a horizontal position can be set at any angle before the cord 26 is actuated to pull it down, and the pressure of the spring 25 will be sufficient to cause the implement and sleeve 21 to turn slowly back to its normal position when said cord is pulled downwardly. Thus a window having curved corners can be reached by a brush or rubber, the said implement being turned at an angle for part of its operation for thoroughly cleaning every part of the curved corners.

It is sometimes desirable to make the sleeve 13 adjustable and especially when the standard 3 is formed of wood and liable to swell or shrink under different weather conditions. In such a case I form the sleeve 13 of divided parts, as seen in Fig. 3, which are formed with outwardly-extending lugs 32, adapted to be drawn together by screws or bolts 33 to a greater or less tightness upon the said standard, as found needful.

The rod 1 for supporting the washer in place in the window is preferably hollow and formed with hollow end sections, as 34, which are interiorly threaded and adapted to receive screw-rods, as 35. The said rods 35 carry frame-engaging shoes 36. Their outer ends may be, if desired, padded or otherwise provided with a frictional engaging surface.

As shown in the drawings, a rubber cushion, as 37, may be carried by the said screws. The said screws also have pivotally suspended from them spacing-rods 38 for holding the screws at the same height on each side of the window-frame. The screw-rods 35 in the opposite end of the supporting-rod 1 are preferably oppositely threaded, so that by turning the said rod 1 the screws will be forced outwardly against the frame of the window. The end sections 34 are adapted to slip over central splicing-rods 39, secured to the main body portion of the rod 1. These rods 39 are preferably secured in position by means of a pin or bolt 40 at one end, the other end being left free to slip into the adjacent section. The sleeve 41 is adapted to be slid over the meeting ends of the adjacent sections of the rod for firmly holding them in position. By removing the end section 34 from such a joint an intermediate lengthening-section may be interposed between the parts for accommodating the said supporting-rod to windows of greater width than those in ordinary use.

The parts of the apparatus above described will be found to be simple in construction and capable of being made in light form and are yet easy of manipulation for the purpose of washing windows.

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

1. A window-washer comprising a handle-bar, a standard mounted thereon, a sliding sleeve upon the standard formed of divisible parts and provided with means for clamping the parts about the standard, means for securing washing-tools to the sleeve, and means for reciprocating the sleeve, substantially as described.

2. A window-washer comprising a horizontal handle-bar, formed with sections and sockets for holding said sections in position, a standard pivoted upon the handle-bar, sockets interposed between said handle-bar and standard, and forming the members of a joint connecting them, means for adjusting the said joint so that the angle of the standard with respect to the handle-bar may be varied, a sleeve for carrying a window-washing tool movably mounted on said standard, and means for raising and lowering the sleeve thereon, substantially as described.

3. A window-washer comprising a handle-bar, a standard pivoted to the outer end thereof, a hollow housing mounted at the upper end of said standard, a hollow drum mounted upon a horizontal shaft in said housing, a flat spring arranged within the drum and connecting the sleeve with the spring-actuated drum, whereby the said sleeve will be normally drawn upwardly on the standard, and means for pulling the sleeve downwardly again whereby a window-washing implement may be reciprocated against the surface of the window, substantially as described.

4. A window-washer comprising a handle, a standard mounted thereon, a two-part sleeve slidably surrounding the same, said parts being formed with outwardly-extending lugs, screws removably securing said lugs together, means for securing window-washing tools to the sleeve, and means for reciprocating the sleeve, substantially as described.

5. A window-washer comprising a handle-bar, and a standard, a sleeve moving upon the said standard, a spline carried by the said sleeve to engage one or more grooves formed in the standard, whereby the window-washing tools may be guided in different directions upon the said standard, and means for reciprocating the sleeve on the said standard, substantially as described.

6. A window-washer comprising a handle-bar, a standard pivoted thereto, a sleeve movably mounted on the standard, means for reciprocating the sleeve on said standard, a hinged spline carried by the sleeve and adapted to engage grooves in the standard for controlling the travel of the window-washing implements, substantially as described.

7. A window-washer comprising a handle-bar, a standard and a sliding sleeve mounted on said standard, a lateral projection on the sleeve for receiving the ends of window-washing implements, and a latch for holding the said implements in said projection together with means for reciprocating the sleeve on said standard, substantially as described.

8. A window-washer comprising a handle-bar, a standard pivoted thereon, a reciprocating sleeve on the standard, a laterally-extending hollow projection on the sleeve for holding window-washing tools, a spring-pressed bolt or latch mounted on said projection and adapted to extend through a slot formed therein, the said bolt engaging the window-washing tools for holding them in the hollow projection, and means connected with the sleeve for reciprocating it on the standard, substantially as described.

9. A window-washer comprising a handle-bar, a standard mounted thereon, a sleeve reciprocating on the said standard, and having a laterally-projecting socket for receiving washing implements, a sleeve or collar surrounding said socket, a spring-pressed bolt carried by said sleeve and projecting through an elongated slot formed in the socket, the said bolt engaging a recess in the stem of the window-washing tool, the slot permitting of the tool turning to different angles in the socket, and means connected with the sleeve on the socket for raising and lowering the window-washing implements, substantially as described.

10. In a window-washer the combination with a handle-bar, and a standard, of a rod or bar for supporting the same in the window-frame, the said bar being formed of hollow rod-sections suitably connected together, oppositely-threaded screws projecting into the end sections of said bar, and carrying shoes at their ends, frictional pads on said shoes, spacing standards or rods hinged to the said shoes for regulating the height thereof on the window-frame, substantially as described.

11. In a window-washer the combination of a handle-bar and a standard, of a rod or bar for supporting the washer in the window-frame, said rod being formed of hollow tubular sections jointed together, the said joints being formed of an internal rod fitting the bore of the tubular sections, means for securing the said rods to one section and a sleeve for slipping upon the said joints and holding the parts in position, substantially as described.

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

SIMEON C. LAWLOR.

Witnesses:

JAMES T. WATSON,

S. H. ECKMAN.