Oct. 1, 1929. P. BERNSTEIN 1,730,030

CLEANING DEVICE FOR WINDOWS OR THE LIKE

Filed Jan. 4, 1927

Fig. 1,

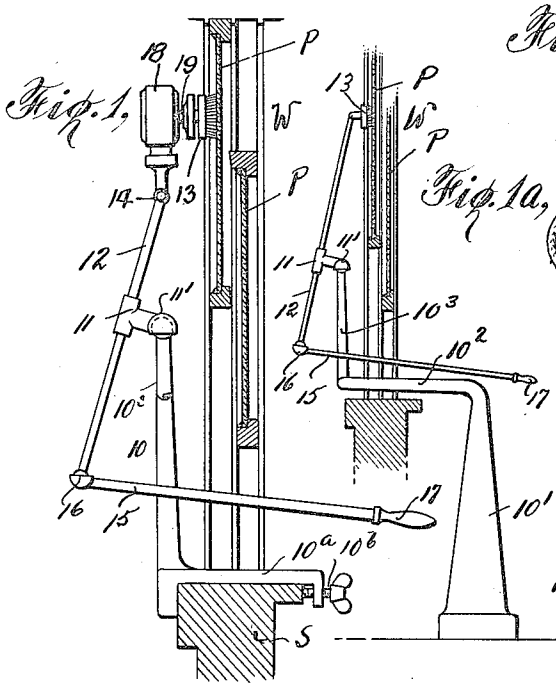


Fig. 1a,

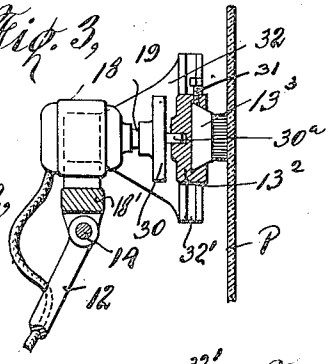


Fig. 3,

Fig. 4,

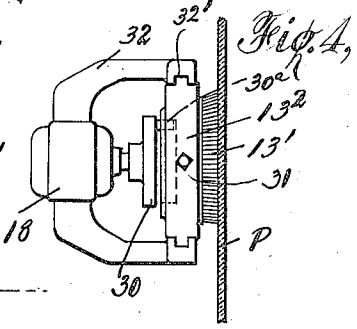


Fig. 2,

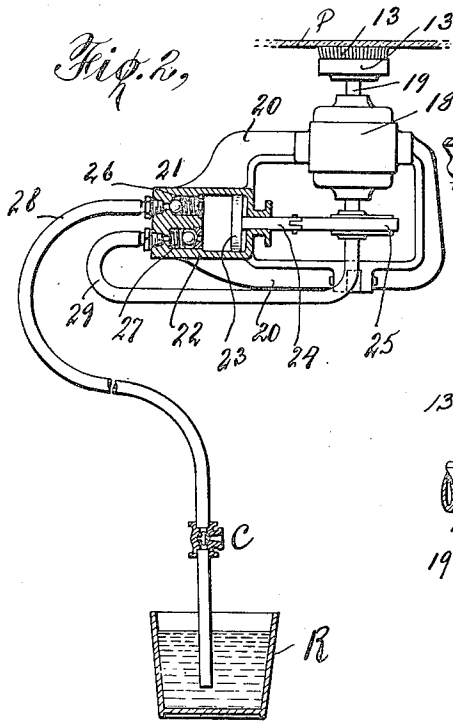


Fig. 5,

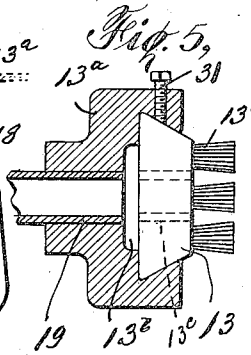


Fig. 6,

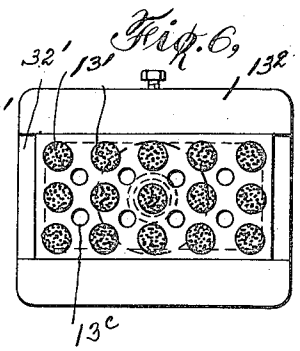
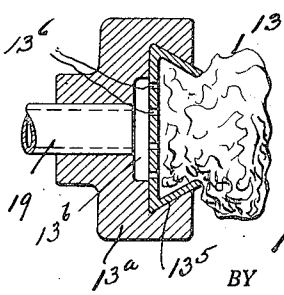


Fig. 7,



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UNITED STATES PATENT OFFICE

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CLEANING DEVICE FOR WINDOWS OR THE LIKE

Application filed January 4, 1927. Serial No. 158,847.

This invention relates to devices for cleaning, scrubbing or washing windows or the like and has for its main object to provide a construction which can be conveniently used for cleaning the outer faces of window panes from the inside of a room.

Another object is to provide a cleaning device which will be operated by motor and controlled by hand so that the work will be greatly expedited and facilitated.

A still further object is to provide means whereby the cleaning implement, while in operation, may be automatically wetted.

With these and other objects in view, my invention consists in the novel construction, combination and arrangement of parts as will be hereinafter more fully described and defined in the appended claims.

In the accompanying drawing which forms part of this specification and in which similar reference characters denote corresponding parts Fig. 1 is a side elevation of my cleaning device in position of use; Fig. 1^a is a similar view of a modified construction thereof; Fig. 2 is a top plan view, partly in section, of a motor driven cleaning device and of the means for automatically wetting the cleaning implement; Fig. 3 is a sectional side elevation of the upper end of the cleaning device, modified in construction; Fig. 4 is a top plan view thereof; Fig. 5 is a vertical section of the upper end of the cleaning device showing details of the means for wetting the cleaning implement; Fig. 6 is a front view thereof and Fig. 7 is a similar view to Fig. 5 of a modified cleaning implement.

In the drawing W denotes the window, P the window panes or sashes, and S the window sill. The cleaning device comprises a rigid support 10 which, according to Fig. 1 has its base 10^a formed with a clamping mechanism 10^b to be clamped to the sill S. This support is provided at its outer end with an upright post 10^c adapted to project outside of the window. Attached to the upper end of said post 10^c by a universal joint 11^1 is a sleeve 11 in which is slidably mounted and guided a rod 14. The upper end of this rod is adapted to carry a suitable cleaning implement 13, such as a brush, mop or the like, which may be yieldingly or pivotally attached to it. The lower end of said rod has hinged or pivoted to it at 16, an arm 15 which is adapted to project through the space below the lower sash, when raised, into the room and which at its inner end is formed with a handle or grasp 17.

In use after clamping or otherwise fixing the device to the sill and grasping the handle 17 the rod 12 will be held at an inclination relative to the outer face of the pane, so that the implement 13 will slightly press against the window pane. By manipulating the rod 15 the user can bring the cleaning implement into different positions of the window pane and move it to and fro over the face of the pane with an increased or diminished pressure until the entire face of the pane is cleaned.

Instead of a support to be clamped to the window sill, as shown in Fig. 1, a pedestal 10^1 may be provided, so that the device need not be attached to the window, but can be just placed in position of use. Thus according to Fig. 1^a a comparatively heavy pedestal 10 is provided which at its upper end has a horizontal arm 10^2 which, when the pedestal is moved close to the window is adapted to extend through the space below the raised lower sash outwardly and which at its outer end is provided with an upright post 10^3. This post 10^3 supports the rod 12 through the sleeve 11 in the same manner as in the first described construction. The pedestal may be mounted on rollers or wheels so as to be easily transportable.

Instead of operating the cleaning implement 13 by hand, the same may be driven from an electric motor 18. This motor may be suitably supported on a frame 20 yieldingly attached as at 14 to the upper end of the arm 12 as shown in Figs. 2 and 3. Suitable means (not shown) may be employed to hold the frame from tilting in a direction away from the window.

The cleaning implement may be a revolving brush or mop of circular shape. In such case the same is mounted on the spindle 19 of the electric motor. The house current or any other electric source may be used for operating the motor. When employing a

motor driven brush the cleaner on turning on the current will merely have to move the arm 12 to bring the implement to different positions of the pane. The brush or mop may be exchangeably fixed on the spindle 19, so as not only to vary the implements according to the size of the panes to be cleaned, but also to permit the exchange of a wet brush or mop for a dry one. The exchange may be quickly accomplished by lowering the arm 12 so that the brush can be easily reached from the inside of the room. Instead of wetting the brush or mop by hand, means may be used whereby the wetting will be effected automatically. This may be accomplished by using a pump 22 mounted on the frame 20 and whose piston 23 is operated from tne motor 18 through an eccentric 25 operatively connected to the piston rod 24 (Fig. 2).

The cylinder of the pump has a suction valve 26 and a compression valve 27. Leading from said suction valve into a water receptacle R is a pipe 28 provided with a cock, preferably a three-way cock C. The compression valve 27 communicates through a pipe 29 with a sprayer (not shown) adapted to be arranged above the tufts of the brush or above the mop. When the motor is in operation the pump will draw water from the receptacle and force the same through the sprayer wetting the cleaning implement. When a dry brush or mop is substituted for the wet implement the cock C is turned to stop the flow of water. When using a three-way cock, one of its passages may be adapted to communicate with the atmosphere. In that case when the flow of water is stopped, air may be drawn by the pump to produce a blast through or on the brush or mop to dry the latter and the pane more rapidly. Instead of a separate sprayer, I may use a hollow motor spindle 19 one end of which may communicate with pipe 29 and the other with a casing 13 carrying the cleaning implement 13. The casing may be formed with a chamber 13^b and the stock of the brush may be perforated as at 13^c so that the water or air forced through the pipe 29 may be discharged through the perforations. Instead of a circular revolving brush one of rectangular shape, as 13^3 (Figs. 3–6) may be used which may be reciprocated by the motor. In this case the brush holder or casing 13^2 is supported in guide grooves 32^1 formed in guide arms 32 projecting from the motor frame (Figs. 3 and 4). For the transmission of reciprocatory motion to said brush the casing 13^2 engages a crank pin 30^a projecting from a disk 30 fixed on the spindle 19. 31 denotes a set screw for fixing the brush in the casing 13^2.

In Fig. 7, the mop 13^4 is fixed in the stock 13^5 which has perforations 13^6, through which water or air entering the chamber 13^b may be discharged onto the mop.

Various other modifications may be made in the construction of the device without departing from the principle of my invention. I therefore do not wish to restrict myself to the details described and shown.

What I claim is:—

1. A cleaning device comprising a rigid support adapted to project outwardly through the window, a universally moveable and adjustable member freely slidable in said support, a cleaning implement carried by said member and a handle pivoted to said member for manually controlling the latter.

2. A device for cleaning windows or the like, a rigid support adapted to project through an open window, a guide member mounted on said support for universal movement thereon, a member slidable in said guide, a cleaning implement carried by one end of said member, a handle projecting from the opposite end of said member through the window and serving for controlling the device from inside of a room and means for automatically wetting said implement during the cleaning operation said means including suction controlled means for supplying a cleaning fluid to said implement.

3. A device for cleaning windows or the like, comprising a rigid support having a part capable of projecting outwardly from the window, a universally movable and adjustable member mounted on said support, a motor carried by the upper end of said member, a cleaning implement driven from said motor, and a handle pivoted to and projecting from the lower end of said member and capable of extending inside the room for manually controlling said cleaning device.

4. A device for cleaning windows or the like comprising a rigid support adapted to project outwardly through the window, a sleeve having a ball joint connection with said support, a member freely slidable in said sleeve, a cleaning implement carried by the upper end of said member and a handle pivoted to the lower end of said member and adapted to project inwardly through said window.

5. A device for cleaning windows or the like comprising a rigid support adapted to project outwardly through the window, a sleeve universally joined to the outer end of said support, a member freely slidable in said sleeve, a motor driven cleaning implement carried by the upper end of said member, means for automatically supplying a cleaning fluid to said implement during the cleaning operation and a handle pivotally connected to the lower end of said member and adapted to project inwardly through the window.

6. A device of the character described comprising a rigid support adapted to project outwardly through the window, a universally movable sleeve thereon, a movable member

slidably mounted in said sleeve, a motor impelled cleaning implement carried by said member and means on said member for manually guiding and moving said cleaning implement over said window panes from the inside of the room.

In testimony whereof I affix my signature.

PETER BERNSTEIN.