L. BOTTENSTEIN.

WINDOW CLEANER.

APPLICATION FILED SEPT. 26, 1914.

1,151,758.

Patented Aug. 31, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

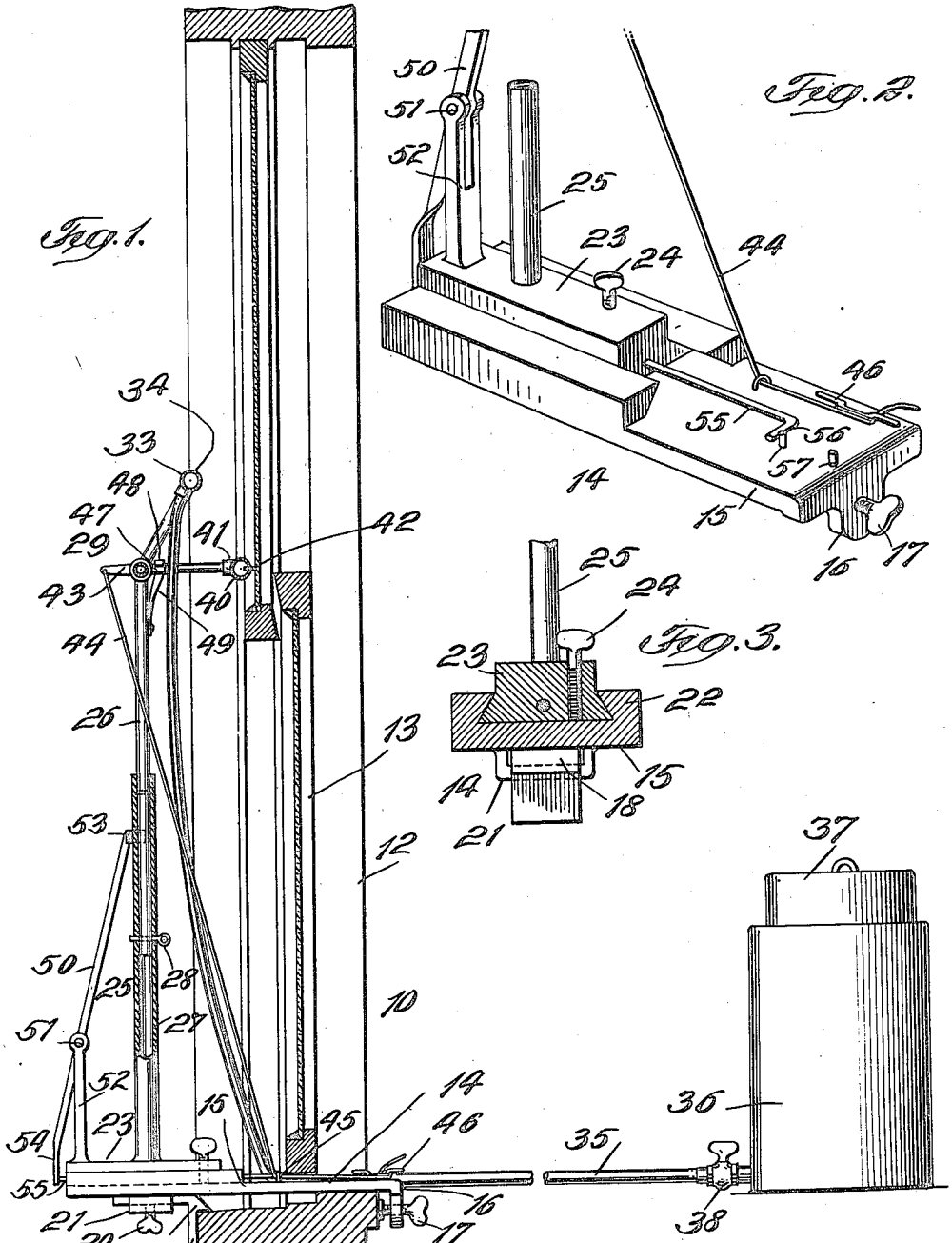


Fig. 2.

Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

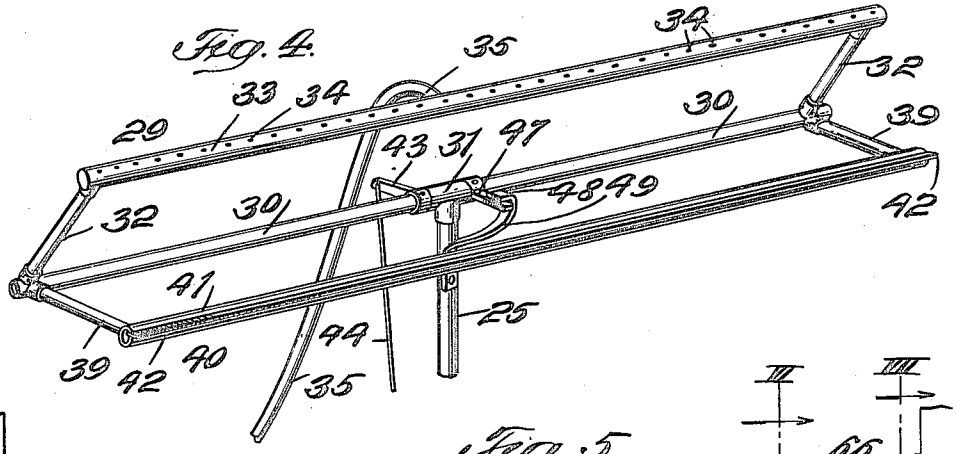


Fig. 5.

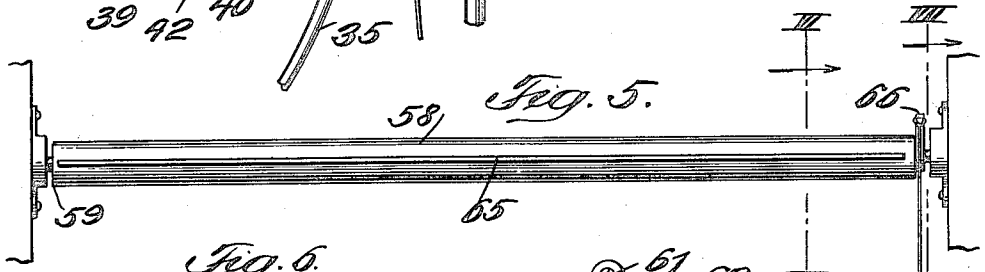
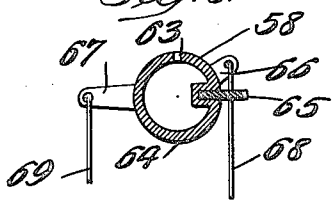


Fig. 6.



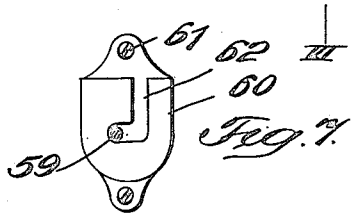


Fig. 7.

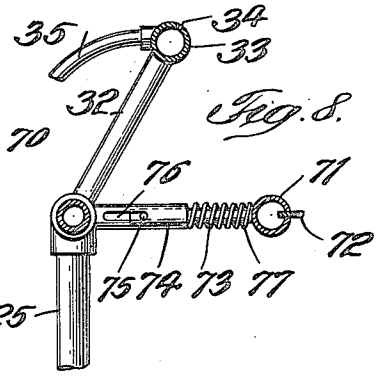


Fig. 8.

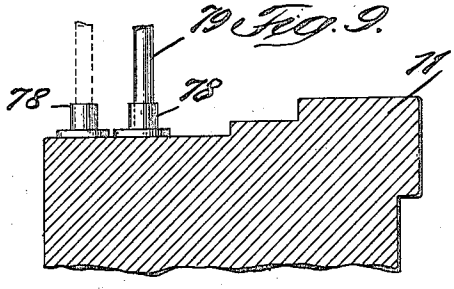


Fig. 9.

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WINDOW-CLEANER.

1,151,758. Specification of Letters Patent. Patented Aug. 31, 1915.

Application filed September 26, 1914. Serial No. 863,675.

To all whom it may concern:

Be it known that I, LEOPOLD BOTTENSTEIN, a citizen of the United States, and a resident of Albany, county of Albany, and State of New York, have invented certain new and useful Improvements in Window-Cleaners, of which the following is a full, clear, and exact description.

This invention relates more particularly to a device or apparatus adapted for washing and cleaning the outside of windows from within a room or building.

One of the principal objects of the invention is to provide a simple and efficient apparatus which is adapted to be supported convenient to the window and which is adapted to be manipulated from the inside of the room in such a way that the window may be first washed to clean the same and then the window wiped to make the same dry and to remove the surplus water from the surface of the window, thereby avoiding the necessity of a person to expose himself to the danger of falling either by sitting on the window sill or by standing on the sill to clean the outside of the window.

Other objects of the invention are to provide simple and efficient means whereby the device or apparatus may be readily placed in position; to provide simple means whereby proper pressure may be exerted by the device against the window for wiping purposes without liability of breaking the window; and to provide simple means whereby the window may be either washed or wiped and water supplied either by a separate pressure device located within the room or from the usual water supply.

Another object of the invention is to provide simple and efficient window cleaning means whereby the window may be wiped or dried by simply moving the window up and down.

A further object of the invention is to provide a simple and efficient window cleaner which may be variously supported and which may be variously constructed to adapt it to windows having a single pane or a plurality of panes in each window sash.

A still further object of the invention is to provide a device which is adapted for cleaning either the inside or the outside of the window.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a vertical section, partly in elevation, showing the invention as applied to a window and in position for use. Fig. 2 is a detail perspective view of the clamping and supporting means for the device. Fig. 3 is a transverse section showing how part of the device may be adjusted with respect to the clamping or supporting means. Fig. 4 is a detail perspective view of the upper portion or head of the device. Fig. 5 is an elevation showing a somewhat different construction of washer and wiper and different means for supporting the same. Fig. 6 is a transverse section taken on the line VI—VI of Fig. 5. Fig. 7 is a transverse section taken on the line VII—VII of Fig. 5. Fig. 8 shows a slightly different arrangement of the form of device shown in Figs. 1 to 4; and Fig. 9 is a fragmentary transverse section showing means which may be employed for supporting the device without the clamp shown in Figs. 1 to 4.

The window 10 has the usual sill 11 and window casing 12 in which casing the window sashes 13 and 14 are adapted to move vertically in the usual or in any preferred way, though instead of the window being of the construction shown, it may be of any desired form in which the windows are tilting or swinging instead of being adapted to move vertically.

A clamp 14 is adapted to be held to the window sill 11 in any convenient position. As shown, this clamp has a base 15, the inner portion of which is provided with a pendent lug 16 in which is a clamping screw 17. At the rear of the base 15 is a member 18 having an angular portion 19 which is adapted to fit about the sill 11 and which is held to the base by means of a screw 20, the end of which passes through a clip 21 on the clamp base so as to hold the member 18 in an adjusted position and hold the clamp rigidly to the sill. The base of the clamp 15 has guides 22 in which is adjustably held a member or slide 23. This slide 23 may be moved to various positions along the base 15 of the clamp and is adapted to be held in such adjusted position by means of a screw

24. The clamp is thus adjustable to fit different windows and comprises two members adjustable with relation to each other.

The slide 23 of the clamp has a standard 25 extending upwardly therefrom. This standard may be tubular or otherwise constructed and may be formed of two telescopic members 26 and 27 which are adapted to be held in various adjusted positions by means of a pin 28 or otherwise. At the upper end of the member 26 is a head 29. This head comprises a rotatable rod 30 which may be tubular and which is adapted to be rocked in the upper end 31 of the standard 25. From the rod 30 extends a set of arms 32, the outer ends of which support a pipe or member 33. The pipe 33 is perforated along one part thereof with small apertures, as 34, and at one portion thereof is connected with a pipe or hose 35 which may extend downward to within the room and may be connected to a tank or bucket 36. The tank or bucket may contain water and may be so constructed that air pressure may be exerted upon the outer surface of the water to force the water from the tank 36 through the hose and through the perforations 34 to wash the window when the pipe 33 is in position, as will be presently described, or instead of air pressure, a weight 37 acting as a plunger may be placed in the tank 36 so as to force the water therefrom, the water through the hose or pipe 35 being controlled by a suitable valve or cock 38.

Arms 39 extend outward from the supporting rod 30 of the head 29 at an angle with respect to the arms 32 and at the outer end of the arms 39 is a wiping or drying device or member 40. This member 40 may have a tubular member 41 in which is held a strip of rubber 42 which extends throughout the length of the member 41, though instead of a strip of rubber, any suitable material may be employed such as suitable fibrous material, paper or any other material which is adapted for use for wiping or cleaning purposes. The pipe 33 as well as the wiper 40 is substantially the width of the window when each sash contains only one pane of glass and when it comprises several panes, the device so far at least as the wiper is concerned, will comprise either a single short section or a plurality of sections each of substantially the width of the different panes.

The head 29 is adapted to assume either one of two positions. When the window is washed, the pipe 33 is moved or permitted to move to a position adjacent to the window pane to be cleaned which will move the wiper 40 away therefrom. To accomplish this, various means may be employed. As one means, the rod 30 may be provided with an arm 43 to which is connected a rope or other connection 44, the lower end of which may be passed through an eye 45 on the clamp base and held in its proper position by winding the same about a cleat 46 or in any other suitable way. The rod 30 is provided with a projection or pin 47 which is adapted to engage an overhanging lip 48 of a stop 49. When the cord 44 is pulled down so as to cause the projection 47 to engage the lip 48 of the stop 49, the wiper 40 is in position to engage the window pane to be wiped, assuming, of course, that the member or slide 23 has been moved to a position to permit this to be done. By releasing the cord, the weight of the head will carry the wiper away from the window and press the washing pipe 33 adjacent to the window, though a spring may be used for this purpose. This is the first position of the device so that when in such position and the apparatus or device is connected to the tank or receptacle 36 with the valve 38 open, water will be forced through the pipe 38 and by raising and lowering the sash, the window may be thoroughly cleaned in this way. If the cord is pulled down so as to force the head to the position shown in Fig. 1, the wiper 40 will then be in position to rest against the pane of the window 14 so that by lowering or raising the window as preferred, the window may be properly dried through the wiping operation of the rubber or other strip 42. The same operation may be accomplished so far as the window 13 is concerned requiring only the adjustment of the members of the standard 25 and the movement of the slide 23 to place the head 29 in position to clean the pane of the sash 13 as already described.

In order to prevent the liability of the window being broken by too great pressure, the standard 25 may be constructed to yield. In such case, I provide a lever 50 which is pivoted, at 51, to a bracket or standard 52 extending upward from the slide 23. This lever 50 has one end provided with a part 53 to span the part of the standard 25 and its lower end, as 54, is adapted to be forced outward by a rod 55. This rod 55, Fig. 2, may have its inner end formed at an angle, as at 56, and is adapted to be held in its adjusted position by either one of a plurality of stops 57. By forcing the rod outward, the lever 50 may be moved on its pivot which will force the standard 25 to carry the head 29 with the desired pressure against the window and without liability of breaking the same. The rod 55 lies substantially within the plane of the base 15 of the clamp, Fig. 2, so that said rod does not interfere with the lower sash being practically closed, as shown in Fig. 1, when the cleaner is in operation. It will thus be evident that the device or apparatus may be readily positioned and adjusted to different sizes of windows and that the head 29 may be so adjust-

ed as to clean and dry the windows properly, and that said drying and cleaning may be performed by the movement of the window itself in a vertical direction.

Figs. 5 to 7 show a somewhat different form of cleaner and support for the same. In this construction, the wiper and the means whereby the window may be washed preparatory to wiping the same, comprises the same element. That is, the pipe with the spraying apertures forms the support for the rubber or other wiping strip. The device as shown in these figures, comprises a tubular member or pipe 58 and has its end provided with shanks or studs 59 and these studs are rotatably held in brackets or supports 60. There are two brackets or supports 60 at each side of the window casing, one for each window sash, and these supports are positioned so that the wiping element of the member 58 may, in one position, engage the surface of the glass. Each support or bracket 60 may be secured to the window casing by screws 61 and is provided with an L-shaped or bayonet slot 62 for the reception of one of the studs 59, the purpose of the L-shaped slot being to prevent the friction of the glass and the wiper from dislodging the member 58 during the wiping operation. This member 58 is provided with a plurality of openings 63 through which the water may pass from the interior of the tubular body 64, the latter being connected to a suitable hose as already described or to any other suitable source of water supply. The body portion 58 is depressed or provided with a slot for the reception of a wiping strip 65 of any suitable material. At one end of the member 58 are outwardly projecting arms 66 and 67 to which are connected the cords or other flexible connections 68 and 69 respectively. It will be seen that by pulling the cords 68 or 69, either the wiper element 65 or the openings 63 may be placed in position to operate upon the window, the action of the device otherwise being the same as already described.

It will be understood that the form of head shown in Figs. 1 and 4 might be substituted for the head or wiper member 58 in which case the supporting standard and clamp would be dispensed with, and that a suitable gutter or device may be used to convey the water passing from the window away from the same and prevent it entering the room or injuring the walls of the building.

In Fig. 8, the head 70 is substantially the same as shown in Fig. 4 except that the wiper member 71 is yieldingly held. The wiper member 71 is provided with a slot to receive the wiping strip 72 and projecting inward from the member 71 at each end thereof is a rod 73 which is adapted to fit into a tubular rod 74 forming with the arm a two-part arm or support at each end of the member 71. Each rod 73 is provided with a pin 75 which has a limited movement in a slot 76, and around said rod is a spring 77 for yieldingly forcing the member 71 outwardly.

Fig. 9 shows a construction which dispenses with the clamp 14. Here, socket members 78 are arranged in proper position for the reception of a standard 79 forming the support for the cleaning and wiping head. The differently positioned sockets are used so that the standard 79 when used on the glass of one window sash may be shifted to the socket for the glass of the other window sash as shown in dotted lines in said figure.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination with a clamp adapted to be attached to a window frame, and a vertical standard carried by the clamp, the upper end of the standard being movable toward and from a window, of a lever fulcrumed above the plane of the clamp and at its upper end engaging the standard to urge the same toward the window, and an operating rod positioned substantially within the plane of the clamp and engaging the lever at its lower end, substantially as described.

2. The combination with a clamp adapted to be attached to a window frame, and a standard carried by the clamp and movable toward and from a window, of a lever pivoted to the clamp and engaging the standard at a point spaced from the clamp to urge the standard toward the window, and a lever operating member lying along the clamp, substantially in the plane thereof and operatively connected to the lever.

This specification signed and witnessed this 22nd day of September A. D. 1914.

LEOPOLD BOTTENSTEIN.

Witnesses:
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