

Jan. 5, 1932.

M. E. KELLER

1,840,201

WINDOW CLEANER

Filed May 27, 1930

3 Sheets-Sheet 1

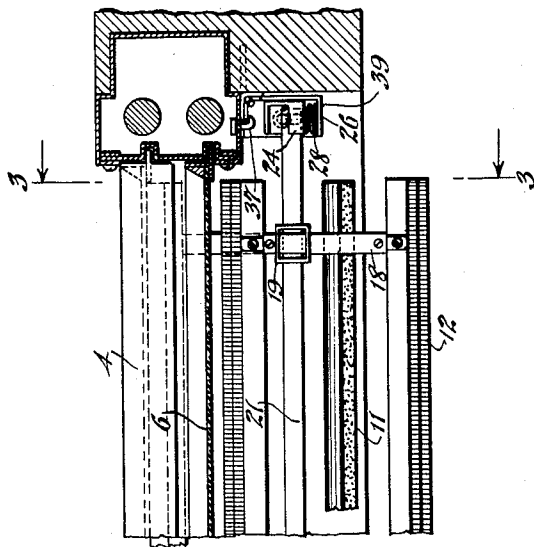
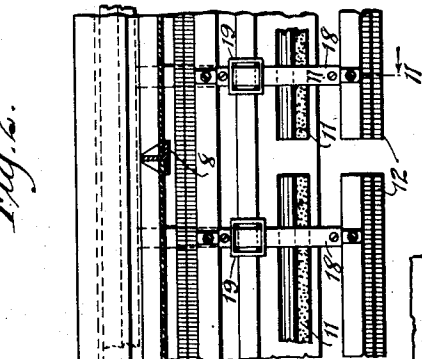
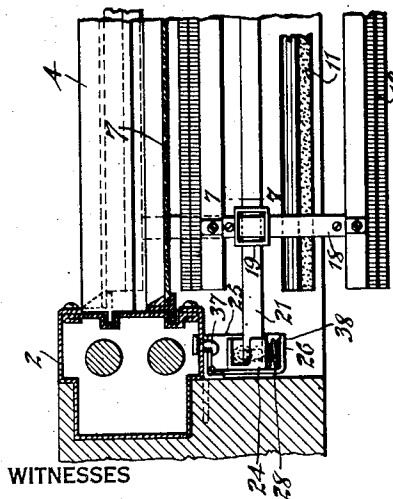


Fig. 2.



WITNESSES

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Fig. 12.

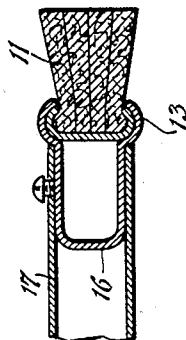


Fig. 11.

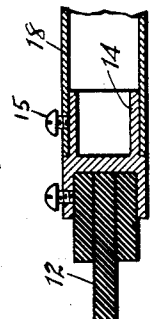


Fig. 13.

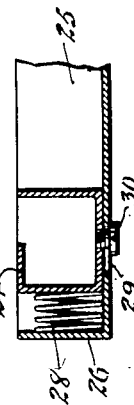
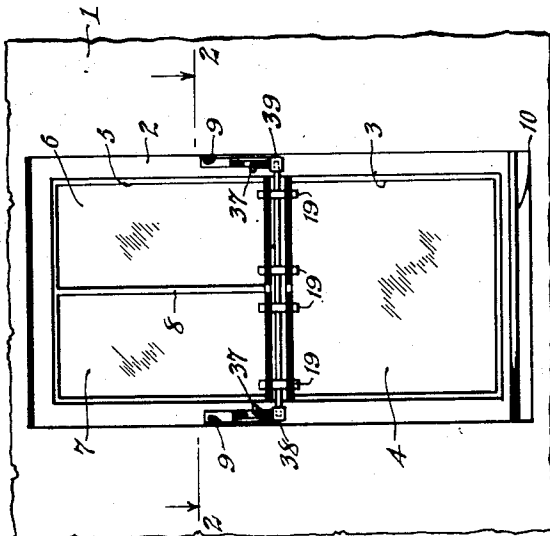


Fig. 1.

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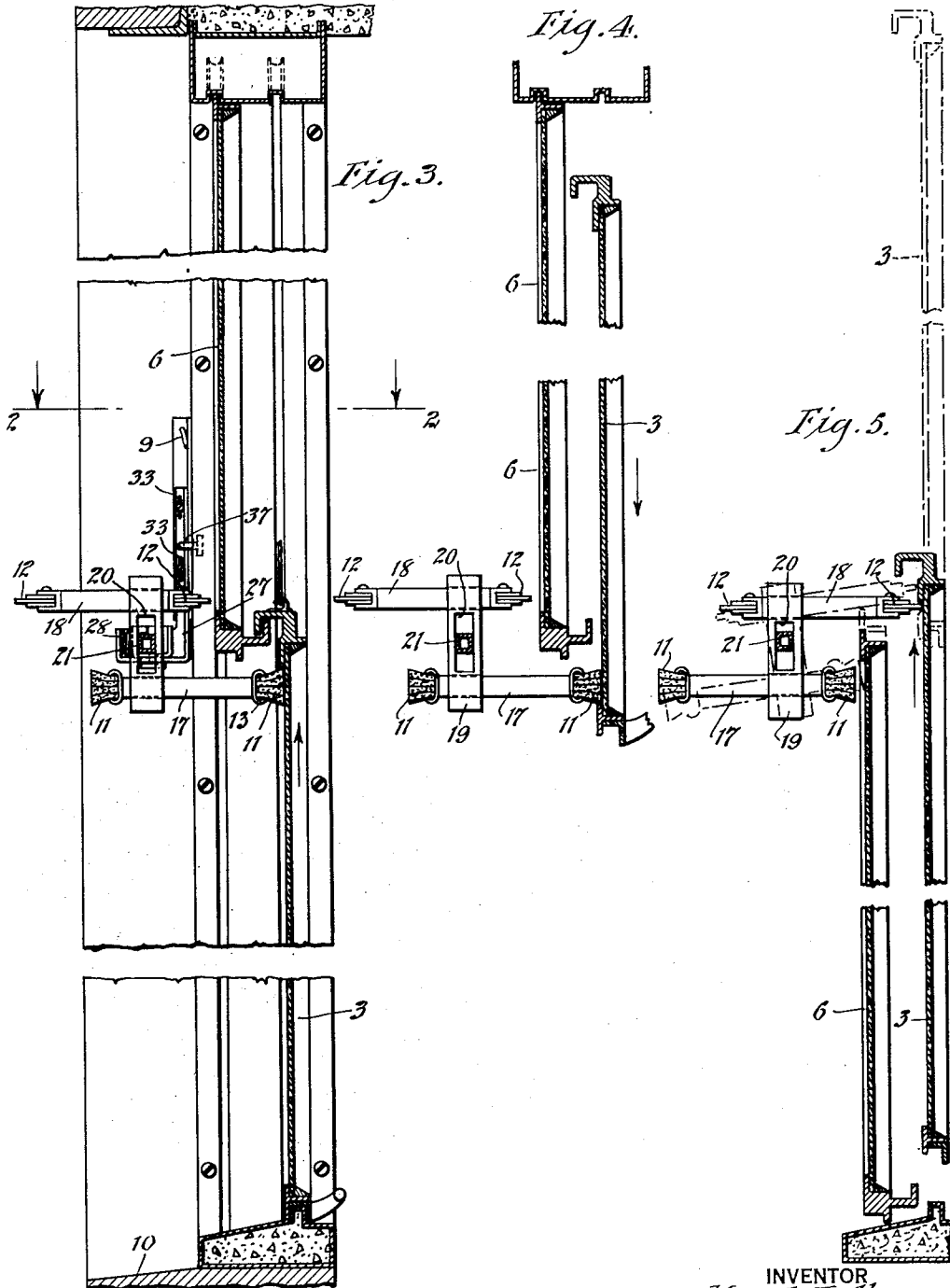
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3 Sheets-Sheet 2



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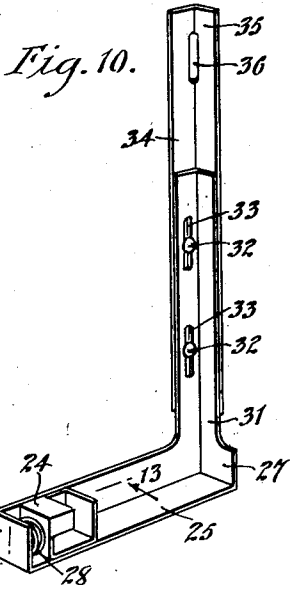
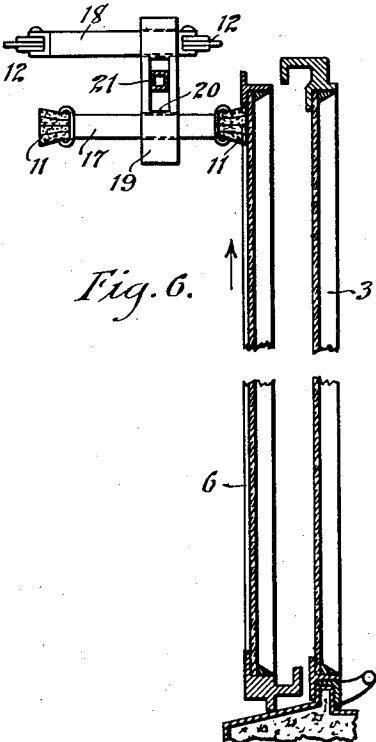
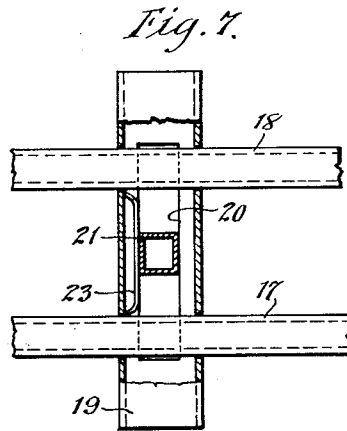
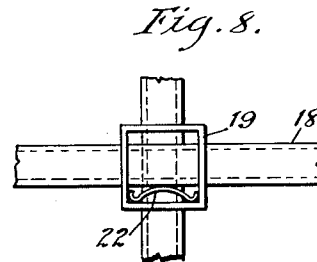
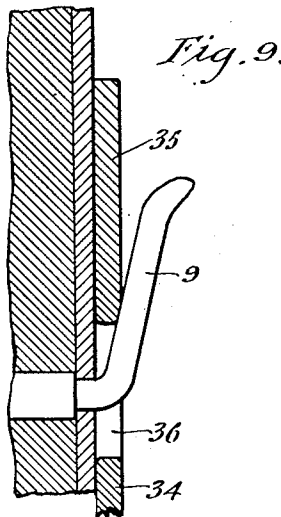
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WINDOW CLEANER

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3 Sheets-Sheet 3



WITNESSES

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UNITED STATES PATENT OFFICE

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WINDOW CLEANER

Application filed May 27, 1930. Serial No. 456,097.

This invention relates to cleaning devices for windows, and particularly to an improved cleaner which is used exteriorly of the window, the structure being such that the cleaner may be permanently or temporarily mounted in position.

Another object of the invention is to provide a window cleaner provided with scrubbing or washing members and squeegee or other polishing members, the parts being arranged so that the different members will function as the window panes are raised and lowered.

A further object of the present invention, more specifically, is to provide a window cleaner having supporting members including a square supporting bar carrying standards in which are arranged sliding cleaning members, one acting to wash the window when in use and the other to wipe the window.

In the accompanying drawings—

Figure 1 is a fragmentary view of a house disclosing a window and an embodiment of the invention applied to the window;

Figure 2 is a sectional view through Figures 1 and 3 on the respective lines 2—2;

Figure 3 is a sectional view through Figure 2 approximately on the line 3—3;

Figure 4 is a sectional view through a pair of window sashes and associated parts with the cleaning or scrubbing members shown in operative position;

Figure 5 is a view similar to Figure 4 but showing the wiping member in operative position;

Figure 6 is a view similar to Figure 5 but showing the scrubbing or cleaning member acting on the outer window pane;

Figure 7 is a fragmentary sectional view through Figure 2 approximately on the line 7—7;

Figure 8 is a top plan view of the structure shown in Figure 7;

Figure 9 is a fragmentary sectional view showing one of the permanent hooks on a window frame, together with the upper part of a supporting bracket embodying certain features of the invention;

Figure 10 is a perspective view of a sup-

porting bracket embodying certain features of the invention;

Figure 11 is an enlarged detailed fragmentary sectional view through Figure 2 on the line 11—11;

Figure 12 is a view similar to Figure 11 but showing the connection of the scrubbing member;

Figure 13 is an enlarged detail sectional view through Figure 10 on the line 13—13.

Referring to the accompanying drawings by numerals, 1 indicates part of a building provided with a window frame 2 which may be of any suitable construction. As shown in the drawings, the frame 2 carries a sash 3 provided with a single window pane 4, while at the upper part sash 5 is provided having two panes, namely 6 and 7, divided by the member 8. Heretofore it has been customary to wash the outside of window panes by standing on the outer sill of a window frame in order to perform the washing operation. In order to do this in large buildings and elsewhere safety hooks 9 are usually provided. A safety strap is usually connected to these safety hooks, which strap is also attached to the body of the person cleaning the outside of the window panes. In this way the worker is supported and held against falling in case he should slip.

In the present invention means have been provided which will obviate the necessity of using such safety straps or the necessity of anyone standing on the outer sill 10 of a window frame in order to clean the outer surface of the panes 4, 6 and 7. This device is shown in detail in Figures 2 to 6 inclusive.

When the device is in use it is arranged as shown in Figure 3, whereby either of the washing members 11 or either of the wiping members 12 may be used. The washing members 11 are preferably of some desired grade of felt, while the wiping members 12 are preferably formed from strips of rubber and present what is commonly known as a squeegee. The washing members 11 are carried by backs 13 secured thereto, preferably by having the ends of the felt forced into the back and held by friction, or they may be formed in some other way. The squeegees or

wiping members are each formed of a rubber strip 12 with a rubber strip on each side thereof as shown in Figure 11, and a holder having a socket on one side in which the rubber strips are fitted and on the other side with an extension 14 connected to arms 18 by screws 15. The back members 13 are likewise held in place by loops 16. Extensions 14 and loops 16 are slidably fitted into the respective squares holding the arms 17 and 18, there being several holding arms 17 for holding the washers in place and also several holding arms 18 for holding the squeegees in place. Members 17 and 18 are arranged in pairs and for each pair there is provided a square standard 19 formed with square apertures into which the arms 17 and 18 are slidably fitted. Each of the standards 19 are also provided with rectangular slots 20 for accommodating the supporting bar 21 which bar is also preferably square. Members 17 and 18 are arranged as shown in Figures 7 and 8 and are held against accidental movement by the respective springs 22. The standard 19 is held in place by the spring 23, as shown in Figure 7. These springs merely prevent accidental movement of these members but permit ready movement when forced by hand.

In order to properly support the holding or supporting bar 21 brackets are provided which interlock at each end of this bar, as shown in Figure 2. In Figure 10 a large detail of these brackets is disclosed, from which it will be seen that the ends of the bar 21 fit into journal boxes 24, which is substantially a cube with certain parts cut away. Each journal box rests on an L-shaped bar 25 having closed ends 26 and 27. The spring 28 acts on end 26 and on box 24 to resiliently urge the box towards the window frame 2.

Bar 25 is provided with a slot 29, and pin 30 is provided which extends through slot 29 into the box 24, whereby the sliding movement of the box is limited. An arm 31 extends upwardly from the bar 25, said arm being provided with a pair of apertures through which bolts 32 extend, said bolts also extending through slots 33 into the adjacent bar 34. Bar 34 is provided with an end section or head 35 having an aperture 36 through which hook 9 extends, as shown in Figure 9. In order to prevent the bracket from swaying special hooks 37 are provided connected with the frame 2 in any suitable manner so as to be swung to a position overlapping the adjustable bar 34 when the parts are in use. It will be understood that the construction just described is used at each end of the square bar 21 for holding this bar in operative position and for allowing the other parts to function accordingly. When the device has been used the respective brackets 38 and 39 are removed, together with bar 21 and associated parts, so that the device

may be mounted outside a second window in order to clean the second window. In this way the device may be transported from window to window whenever desired.

When in use the springs 22, shown in Figure 8, hold the arm 17 sufficiently to permit an appreciable pressure by one of the washing members 11 against the pane of glass being cleaned. As shown in Figure 2, one set of squeegees and one set of cleaning members are divided into two parts so that the panes 6 and 7 may be cleaned while the other squeegees and cleaning members are the full length of the pane 4. In case both the upper and lower panes are the size of the pane 4, the half length squeegees and cleaners would be removed and full length ones substituted. When the parts are in the position shown in Figure 3 it is only necessary to raise the sash 3 and cleaning member 11 will perform the cleaning operation thereon. Before this is done cleaning member 11 is wet in any suitable manner as, for instance, by having water poured thereon or by having this member dipped in water and then placed in operative position.

In case it is desired, sash 3 may be raised and lowered several times so as to give a scrubbing action thereto. After the pane has been cleaned in this manner the arms 17 are withdrawn, as shown in Figure 5, and the window sash raised slightly, after which arms 18 are moved toward the sash until the squeegee 12 contacts with the pane. The sash is then raised with the squeegee in contact therewith, whereupon the water or other matter on the pane will be wiped therefrom. As soon as sash 3 has been wiped sash 6 is raised until it strikes the arms 18. This will cause the arms 18 and the bar 21 to rock somewhat, as shown in dotted lines in Figure 5. This rocking movement is permitted by the loose connection of the square bar 21 with the respective boxes 24. This rocking movement is not great but is sufficient to move the squeegee a very short distance away from the pane, whereupon the pane may be lowered to the position shown in Figure 5, and then arm 18 slid outwardly. In this way the lower pane is cleaned and then wiped.

If the upper sash carries two panes, as shown in Figure 1, the square bar 21 is removed from its supporting boxes and rotated for one-half revolution, whereupon the divided washing members and squeegees will be in the position for cleaning the respective panes 6 and 7. If a single pane is in the upper sash this operation is not performed.

During the washing operation the arms 17 are projected as shown in Figure 6 and the upper sash moves back and forth once or as many times as desired. After the washing operation the arms 17 are moved out of the way and the squeegee 12 is moved over into contact. Preferably the squeegee con-

tacts with the upper edge of the pane as the glass is moved upwardly. Before this is done the sash 3 is moved to the top of the window frame so that sash 2 may be readily forced upwardly. As soon as the lower part of the upper sash reaches the squeegee the cleaning operation is completed and the squeegee may be slid outwardly to the position shown in Figure 6. The bar 21 and associated parts are then disconnected and the device moved to another window so that the operation may be repeated.

It will thus be seen that the outside of window panes may be thoroughly washed and wiped by the washers and squeegees without the necessity of the person performing this work leaving the room and, therefore, without endangering his life.

What I claim is—

1. A window cleaner comprising a pair of supporting brackets, a reversible bar carried by said brackets, a plurality of sets of arms supported by said bar and mounted thereon to slide transversely thereof, a cleaning member carried by one set of arms and a second cleaning member carried by the other set of arms whereby upon the reversing of said bar either cleaning member may be brought into operation on the same surface.

2. A window cleaner comprising supporting brackets, a reversible rectangular bar carried by said brackets, a plurality of rectangular standards carried by said bar extending vertically when the cleaner is in use, an arm mounted in each of said standards at each end thereof, each of said arms being positioned to extend and slide in a horizontal plane when the cleaner is in use, and cleaning members carried at each end of said arms.

3. A window cleaner comprising a plurality of sets of slidably mounted arms, a cleaning member connected to each end of said sets of arms, a reversible standard for supporting said arms whereby either of said cleaning members may be brought into operation on the same surface, said arms being slidable toward and from a window pane when in use, and means for supporting said standard.

4. A window cleaner comprising a square supporting bar, a plurality of standards mounted thereon, each of said standards having a slot whereby the standards may move vertically when in use, spring means carried by said standards acting on said bar for normally preventing movement of said standards, a cleaning member carried by one end of said standards, said cleaning member being mounted on the standard to move toward and from a window pane when in use.

5. A window cleaner including a cleaning member, a rectangular supporting bar, means for slidably supporting said cleaning member on said bar so as to be independently slid towards and from a window pane when

in use, and a pair of brackets for supporting said bar, each of said brackets including a supporting structure for the bar, a bearing box carried by the brackets for receiving the end of said bar, said bearing box being slidable, and a spring acting on the bearing box for urging the same in a direction toward said window pane.

6. A window cleaner including a supporting bar, a plurality of standards carried by said bar, each of said standards having a slot therein to permit vertical movement of the standards in respect to said bar, each of said standards having a square aperture therein near the upper end and a square aperture near the lower end, a sliding arm arranged in each of said square apertures, a cleaning member carried by the arms in the upper square apertures, a second cleaning member carried by the arms of the lower square apertures, a spring friction member for each standard positioned to press against said bar and against the respective standards for preventing accidental movement of said standards in respect to said bar, and spring friction members pressing respectively against the respective arms and against the respective standards for preventing accidental movement of said arms in respect to the standards.

7. A window cleaner comprising a plurality of sets of arms, a cleaning member mounted on each end of each set of arms, vertical movable standards for supporting said sets of arms, a member extending through all of said standards and carrying said standards, said member when in one position holding said standards and cleaning members so that one cleaning member will function, and when in a second position holding said arms and cleaning members so that the other cleaning member will function, and a bracket at each end of said member for engaging the member and supporting the same in different adjusted positions.

8. A window cleaner including a supporting bar, a plurality of standards carried by said bar, each of said standards having an aperture extending therethrough near the top and near the bottom, an arm slidably mounted in each of said apertures, a cleaning member carried by the arms mounted in the upper apertures, a second cleaning member carried by arms mounted in the lower aperture, said arms being slidable horizontally in said apertures, a spring associated with each of said arms engaging the respective arms and the standards for preventing accidental sliding movement of the arms.

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