Aug. 1, 1933. V. R. HEDDEN 1,920,860

WINDOW CLEANING DEVICE

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FIG. 1.

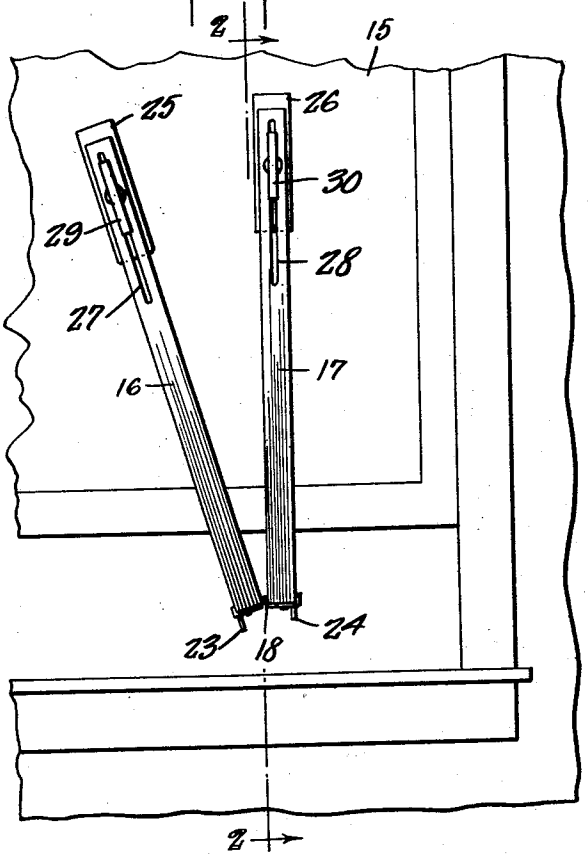


FIG. 2.

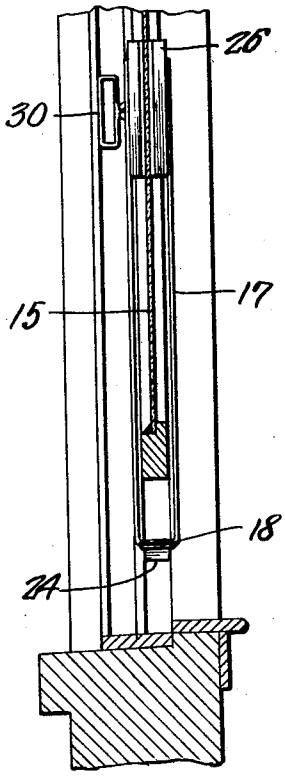


FIG. 3.

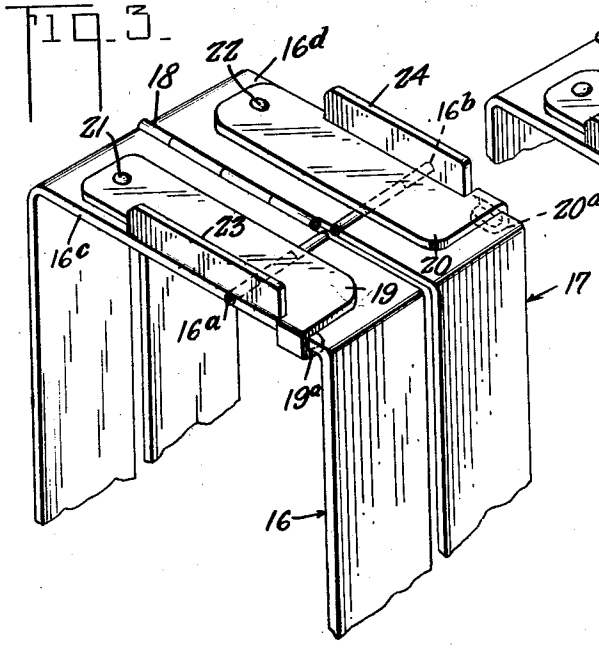
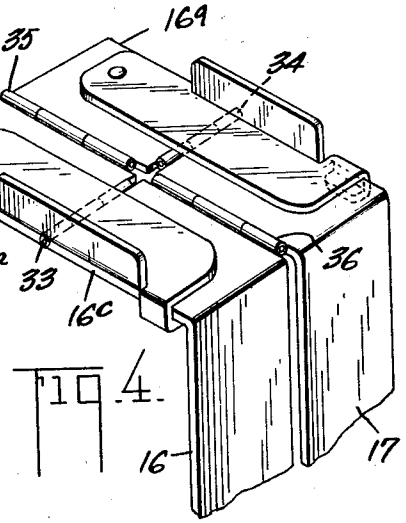


FIG. 4.



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Fig. 5.

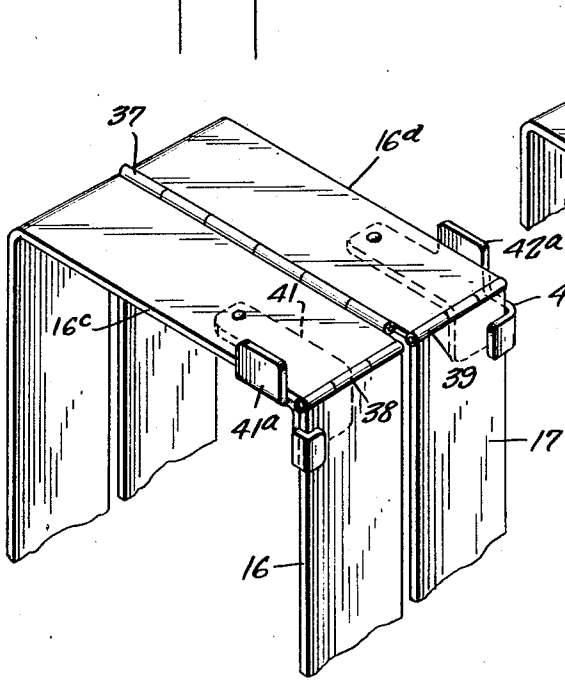


Fig. 6.

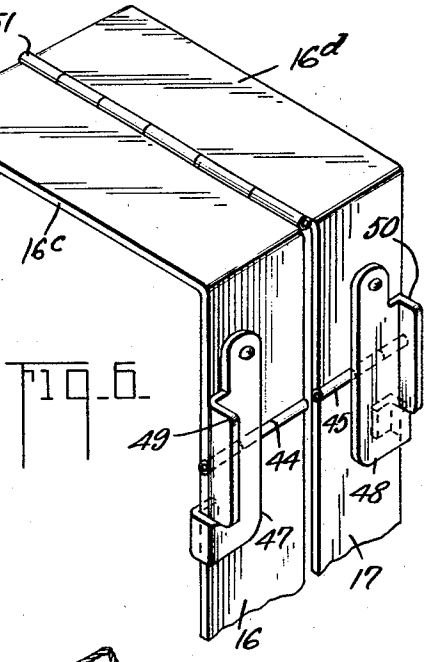


Fig. 7.

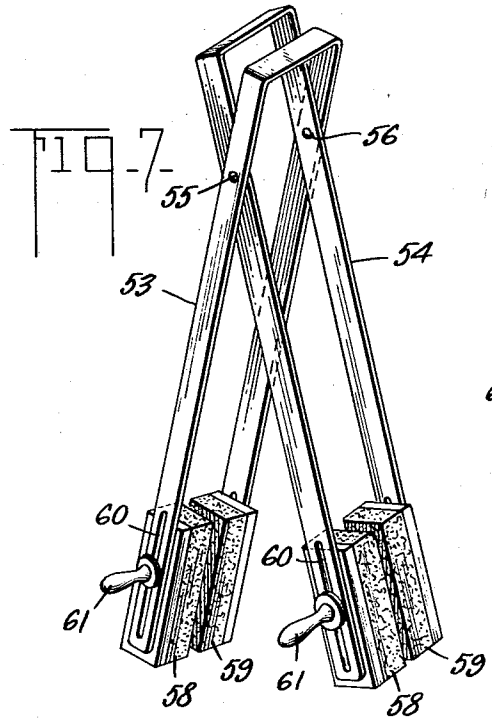
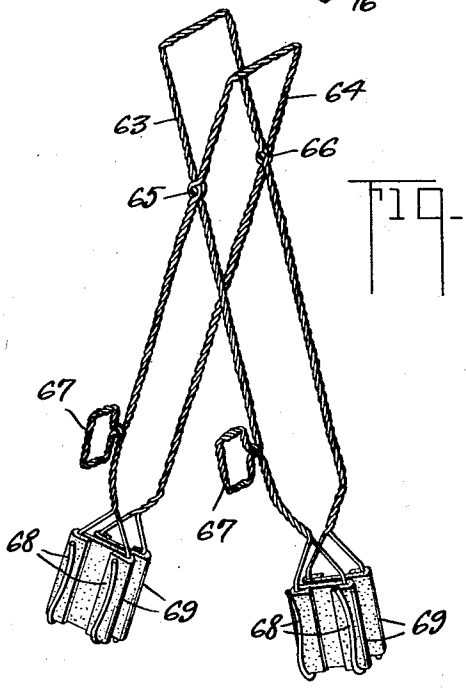


Fig. 8.



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Fig. 9.

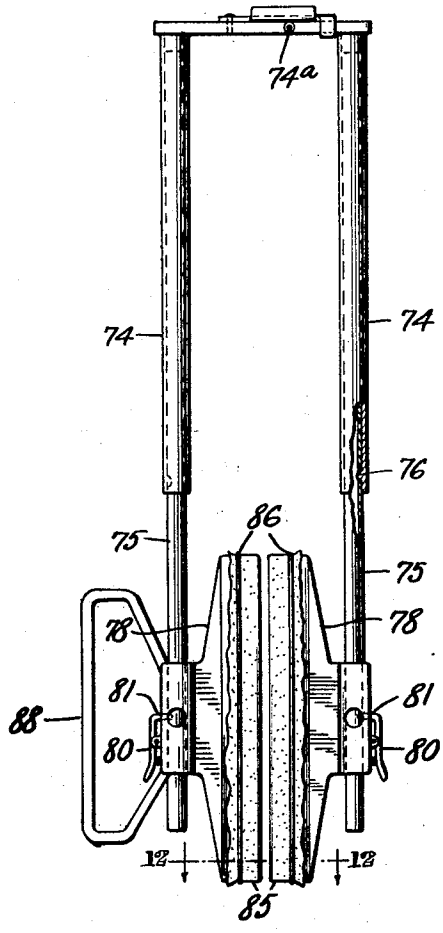


Fig. 10.

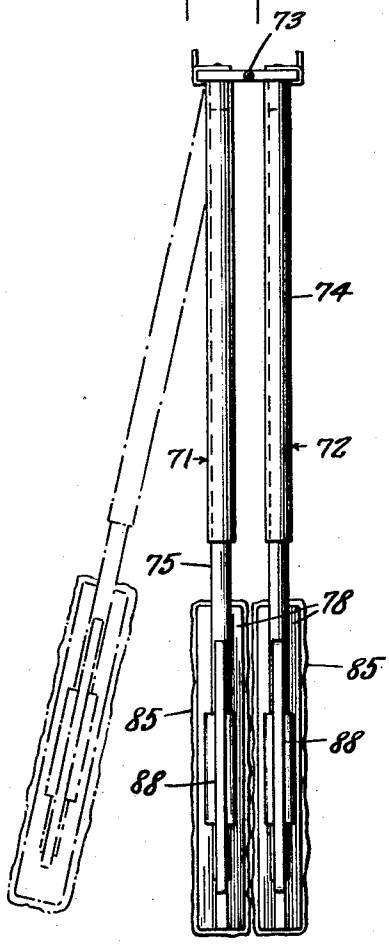


Fig. 11.

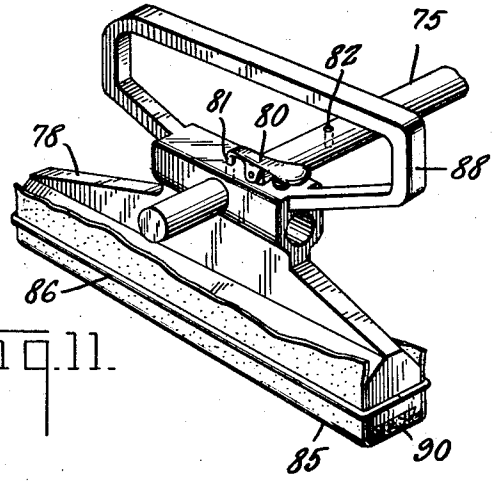
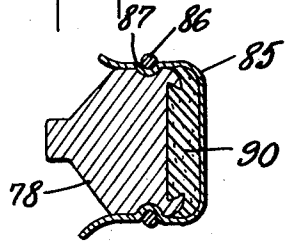


Fig. 12.



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UNITED STATES PATENT OFFICE

1,920,860

WINDOW CLEANING DEVICE

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Application January 29, 1932. Serial No. 589,700

2 Claims. (Cl. 15—220)

This invention relates to cleaning devices and more particularly to cleaning devices adapted to clean windows.

An object of the invention is to provide a window cleaning device adapted to clean both sides of a window simultaneously; to provide a device of the character mentioned which is easily and simply operated, which is of light weight and which holds itself in position on a window.

Another object of the invention is to provide a device of the character mentioned which is provided with a plurality of pads, certain of which are adapted to clean and the others adapted to dry the window so that the cleaning and the drying are accomplished in one operation.

Other objects of the invention will be appreciated from a reading of the following specification.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therefrom as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

In the drawings:

Fig. 1 is a fragmentary elevational view of a window in open position and showing in elevation one form of my invention positioned on the window for cleaning the same.

Fig. 2 is a section taken on the vertical line 2—2 of Fig. 1, looking in the direction of the arrows.

Fig. 3 is a fragmentary perspective view showing an end portion of one form of my invention.

Figs. 4, 5 and 6 are fragmentary perspective views showing modifications of my invention.

Figs. 7 and 8 are perspective views of still other modifications of my invention.

Fig. 9 is an elevational view, partly broken away, of still another form of my invention.

Fig. 10 is a side elevation of the device shown in Fig. 9.

Fig. 11 is a detailed perspective of a portion of the device shown in Fig. 9; and

Fig. 12 is a section taken on the line 12—12 of Fig. 9, looking in the direction of the arrows.

Referring to the drawings for a more detailed description thereof, both sides of the window 15 are adapted to be simultaneously cleaned, including the drying operation, by all forms of my invention, the various forms each comprising a pair of U-shaped members pivotally connected and carrying four pads, two of the pads being adapted to contact with one side of the window and the other two to contact with the other side of the same and to be held in contact with the window by means hereinafter described, said pads being preferably adjustably mounted so that they may be variously positioned as required to suit various working conditions, handles being preferably provided whereby the devices or any of them may be manipulated.

The form of my invention shown in Figs. 1, 2 and 3 comprises U bars 16 and 17 pivotally connected by means of a hinge 18, said U bars including respectively hinges 16*a* and 16*b* connected in the cross or end pieces 16*c* and 16*d*, respectively, the hinge 18 allowing the U bars to be manipulated angularly with respect to each other in cleaning the window and the hinges 16*a* and 16*b* allowing separation of the legs of the respective bars so that the pads carried by said bars may be sufficiently spread apart to allow the same to pass the window rail. Means are provided for holding rigidly together the hinged parts of each U bar to the end that the pads carried by said bars may be held to the window, said means comprising clamps 19 and 20 pivotally connected to the U bars 16 and 17, respectively, as indicated by the numerals 21 and 22 in Fig. 3, said clamps lying on the cross pieces 16*c* and 16*d*, respectively, including the hinges 16*a* and 16*b* and comprising lips 19*a* and 20*a*, respectively, which contact with the lower or inner faces of the cross pieces 16*c* and 16*d*, respectively. Flanges 23 and 24, shown in Fig. 3 as extending above the clamps 19 and 20, respectively, and connected thereto, are provided for convenient manipulation of said clamps, which, it will readily be understood, are swung outwards to allow the hinges 16*a* and 16*b* to function when it is desired to pass the pads over the window rail.

The free ends of the mentioned U bars 16 and 17 are provided respectively with pads 25 and 26 which are adjustably mounted on the bars, the adjustability of the pads being in the facts that they are adjustable lengthwise of the legs of the U bars and are pivotally connected to the legs so that they may be swung to any desired position at any point in their longitudinal adjustments, said pads being connected to the U bars by means of screws passing through slots 27 and 28 in the respective bars 16 and 17, the mentioned screws

beings secured to the pads and being provided respectively with means 29 and 30 for tightening and loosening the screws, said means 29 and 30 also functioning as handles whereby the cleaning device may be operated.

The modification of my invention shown in Fig. 4 is similar to that shown in Figs. 1, 2 and 3 with the exception that hinges 33 and 34 corresponding respectively to the hinges 16*a* and 16*b* of the first described form, are transversely centrally positioned relative to the cross pieces 16*c* and 16*d* and hinges 35 and 36, corresponding in function to the hinge 18 of the first described form, are employed in the present modification.

The modification shown in Fig. 5 employs at hinge 37 extending substantially the length of the cross pieces 16*c* and 16*d* to join or connect the members 16 and 17 and the hinges 38 and 39, which correspond respectively to the hinges 33 and 34, as well as to the hinges 16*a* and 16*b*, are disposed at one of the corners of the members 16 and 17, clamps or locks 41 and 42 corresponding to the clamps or locks 23 and 24 of the first form of my invention described lying adjacent the hinges 38 and 39 respectively, and contacting the cross pieces 16*c* and 16*d* and one of the legs of the U bars 16 and 17, lugs or finger pieces 41*a* and 42*a* being provided for manipulating the mentioned clamps or locks.

The form of my invention shown in Fig. 6 includes hinges 44 and 45 connected respectively in adjacent legs of the members 16 and 17 intermediate the ends of the legs, pivoted clamps 47 and 48 being provided for clamping or locking the parts of the legs joined by the hinges, these clamps or locks being provided with operating finger pieces 49 and 50, respectively. This form of my invention is provided with a hinge 51 joining the cross pieces 16*c* and 16*d* of the U bars and extends the length of the same.

In the form of my invention shown in Fig. 7, U bars 53 and 54 are pivotally connected together at 55 and 56, said bars at their free ends carrying adjustably mounted pads 58 and 59, the former being adapted to contact one side of a window and the latter to contact the other side of the same. The mentioned pads are connected to the legs of the U bars by means of screws passing through elongated slots 60 formed in the legs of the bars and provided with manipulating handles 61. The pads are thus not only longitudinally adjustable relative to the legs of the U bar but are swivelly mounted so that they may be placed in any desired position.

In Fig. 8 I show still another form of my invention which comprises U-shaped members 63 and 64 pivotally connected at 65 and 66, each member being formed from a pair of wires twisted on each other in a manner to form operating handles 67 in the form of loops and to form pad retaining means, each pad retaining means being formed by the separation and appropriate bending of the wires from which the members are formed, said pad retaining means including spring clips 68 formed from the end portions of the wires and adapted to press against the pads 69.

Figs. 9 to 12, inclusive, show still another form of my invention which comprises a pair of hingedly connected U bars or rods 71 and 72 provided with a hinge 73 connecting the bars or rods together and corresponding to the hinge 18 of Fig. 3, and provided also with hinges 74*a* corresponding to the hinges 16*a* and 16*b* of Fig. 3. The legs of the U bars or rods 71 and 72 each consist of a bar of telescoping members 74 and 75, respectively, provided so that the length of the legs is adjustable. The members 74 are tubes which receive the members 75, which are rods, the inner surfaces of the tubes 74 being provided with projections or processes 76, which may be sprung into and out of corresponding recesses formed in the rods 75 and which are adapted to hold the rods to adjusted position. Pad holders 78 are adjustable longitudinally on the rods 75, said holders being adapted to be held on said rods in adjusted position by means of spring-pressed members 80 having detents 81 engageable in recesses 82 formed in the rods 75. Apertures are formed in the holders 78 through which pass the rods 75, said apertures being somewhat larger in diameter than the rods so that the holders and the pads held by them are given a swiveling or swaying motion when the cleaner is operated in order to present changed surfaces of the pads to the window. Pads 85 are clamped onto the holders 78 by means of split spring wires 86, which fit into grooves 87 formed in the sides and ends of the holders. Handles 88 for manipulating the cleaner extend from each holder, the mentioned holders being preferably but not necessarily provided with rubber insets 90 adjacent the operating faces of the pads 85. It will readily be appreciated that the pads 85, as well as the pads in the other forms of my invention described, may be readily taken from and replaced on their respective holders.

By providing a hinged connection between the U-bars, both hands of an operator may be employed in the window cleaning operation and the action of the two hands is coordinated, since the one U-member may be rocked first by the one hand, followed by a rocking or sweeping action of the other by the other hand. The hinged connection between the two insures against erratic movement of the two devices in such an operation. Further, the cleaning pads being adjustably mounted on the legs of the U-shaped members, the pad on the outside may be positioned, on the one member, in towards the hinged connection between the two members, while the inside pad on the same member may be adjusted toward the outer or free extremity of the leg of that member. The two pads on the other U-shaped member may be adjusted to occupy corresponding positions but opposite—that is, with the outer outside pad at the outer extremity of the leg of the U-shaped member and the inner pad in toward the pivotal or hinged connection. In this arrangement, the two pads on the one U-shaped member swing in different arcs, so that the operator may clean a comparatively large area at one sweep of the two hands, the inner pad on one member cleaning an area opposite the outer pad on the other member and vice versa.

What is claimed is:

1. A window cleaner comprising U-bars pivotally connected and a pair of spaced pads carried by each of said bars, one on each leg of the same, the corresponding pads of each pair being respectively adapted to contact the inside and the outside of a window pane.

2. A window cleaner comprising U-bars, a pair of spaced pads carried by each of said bars, one on each leg of the same, the corresponding pads of each pair being adapted respectively to contact with the inside and outside of a window pane, and operative connections between the U-bars to insure coordinate movement of the same in the window cleaning operation.

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