Sept. 26, 1961 H. J. MILLER 3,001,219

HANDLE MEANS FOR WINDOW CLEANING DEVICE

Filed Feb. 14, 1958

Fig. 2

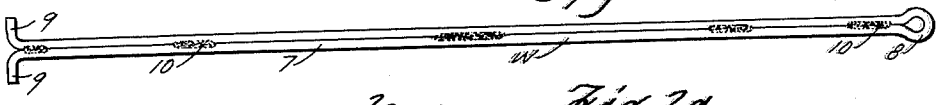


Fig. 2a

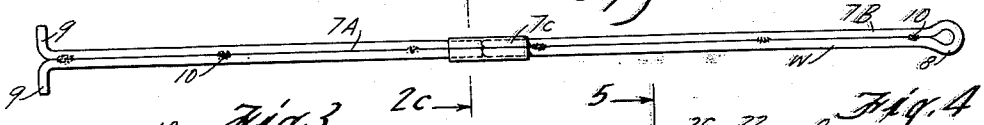


Fig. 3



Fig. 4

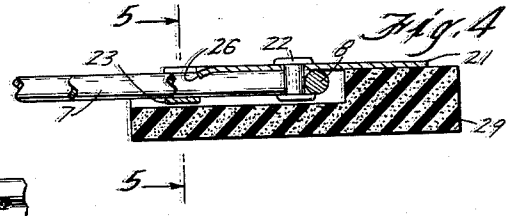


Fig. 2b

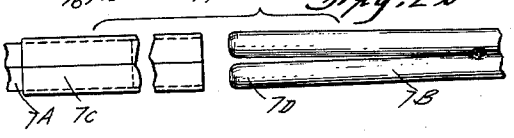


Fig. 5

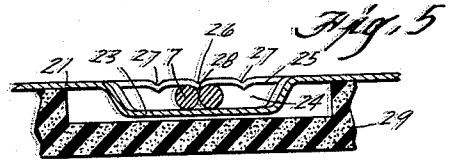


Fig. 2c

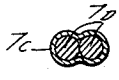


Fig. 1

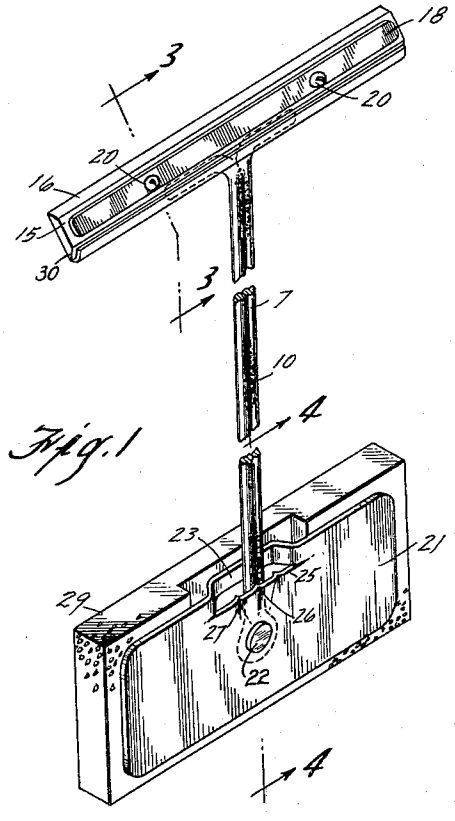
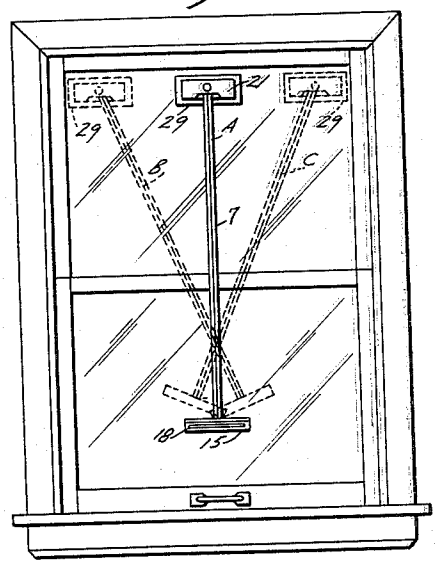


Fig. 6



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HANDLE MEANS FOR WINDOW CLEANING DEVICE

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6 Claims. (Cl. 15—121)

The invention relates to a window cleaning device of the type comprising a washing and a drying element carried at opposite ends of a slender rodlike handle which permits the user to clean the inside and the outside of the panes of each window frame while standing inside the room, the device being capable of being manipulated within the space between the windows.

It is an object of this invention to provide handle means for such a device which includes a handle that is adapted to cooperate with a support member for a washing means to provide an angularly adjustable connection therebetween and that is further adapted to cooperate with a support member for a drying means to provide a rigid connection therebetween.

It is another object of this invention to provide a handle that may be firmly gripped and that is relatively more yieldable in a selected plane to prevent glass breakage while allowing for firm control.

It is a further object of this invention to provide a handle that may be manufactured in two separable parts whereby the washing and drying elements may be used individually or may be joined together to be used as a unit.

It is still another object of this invention to provide handle means wherein the handle and its associated elements may be simply and inexpensively manufactured.

This application is a continuation in part of my application Serial No. 705,035, filed December 24, 1957, for Window Cleaner, now abandoned, and includes a modification of the handle by which it may be separated into two parts to form a smaller package for shipping purposes.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawings:

FIG. 1 is a perspective view of the device, parts being broken away;

FIG. 2 is a plan view of the handle of the device;

FIG. 2*a* is a plan view of an alternate embodiment of the handle of the device wherein the handle is sectioned;

FIG. 2*b* is a fragmentary view showing a portion of the handle of FIG. 2*a* with sections separated;

FIG. 2*c* is a sectional view taken along the line 2*c*—2*c* of FIG. 2*a*;

FIG. 3 is a detailed sectional view taken on the line 3—3 of FIG. 1;

FIG. 4 is a detailed sectional view taken on the line 4—4 of FIG. 1;

FIG. 5 is a vertical sectional view taken on the line 5—5 of FIG. 4;

FIG. 6 is an explanatory view of the device in operation.

Referring to FIG. 1, the device comprises a handle 7, a drying means or squeegee secured to one end of the handle and a washing means secured to the other end of the handle.

As shown in FIG. 2, the handle 7 is formed of small diameter round steel wire W in practice, for example, about five-thirty-seconds of an inch in diameter which is bent upon itself intermediate its ends to provide an eye 8 and has out turned legs 9 at its other end. At spaced intervals 10 adjacent parts of the wire are welded together

to provide a handle which is firm enough to exert the desired force on the elements at its ends but which under excessive strains is capable of flexing in the direction of the applied force so that the strains imposed upon the element being used through pressure exerted on the handle will not cause window breakage. The handle is of a length somewhat longer than that of a single window sash.

Instead of making the handle in one piece, it may be made in two substantially equal length sections 7A and 7B as shown in FIG. 2*a* of the wire W, the sections having a detachable joint connection with each other formed by a double tube socket member 7C secured to the inner end of the section 7A and the normally somewhat spread or sprung apart ends 7D of the inner ends of the wires W of the section 7B so that their sprung ends when inserted in the tubes of the socket member 7C will through their spring action engage the walls of these tubes to firmly hold the sections together, yet may be readily pulled apart, if desired, for shipping or storage purposes.

The squeegee includes a sheet metal backing plate 11, preferably having an angled flange 12 extending along its top edge and is provided at spaced points with threaded holes 13. This plate is integrally united adjacent its upper back edge and centrally thereof by welds 14 to the legs 9 so as to dispose it at the desired angle to the handle 7. A rubber squeegee blade 15 rests lengthwise of and on the plate with its front edge 16 projecting beyond the same and is apertured at 17 in line with the threaded holes 13. The blade 15 is clamped against the plate 11 by a front metal bar 18 which has holes 19 alined with the holes 13 and 17 so that headed clamping screws 20 may pass through the alined sets of holes 19, 17 and 13 and adjustably engage the threaded holes 13 to hold the parts firmly in assembled relation. The blade 15 is a double edge blade of sufficient thickness to provide the tapered front edge 16 and the tapered back edge 30 which fits the angled recess provided by the flange 12 and the body of the plate as shown in FIG. 3. The blade is reversible so that either edge 16 or 30 may form the front window pane engaging edge so that when one edge wears down, the blade may be reversed to present a new edge, thus increasing the useful life of this part of the device. Also because of removable screws and detachable bar 18, a new blade may be substituted for a used blade.

The washing means includes a sheet metal rectangular backing plate 21 which is pivotally connected to the eyed end 8 of the handle by a rivet or pin 22 mounted centrally of the plate, both widthwise and lengthwise. At the handle side, the plate has a strap portion 23 upset laterally to provide a slot 24 through which this end of the handle projects and a strap portion at one side of the slot against which the bottom side of the handle rests and along which it may swing. The other side 25 of the slot has a centrally disposed indentation or tooth 26 and angularly extending indentations providing teeth 27 spaced equal distances from the tooth 26 and with the rivet 22 as a center extending at an acute angle from the normal right angled position of the plate 21 relative to the handle. Each of the teeth is adapted to be releasably engaged in the recess 28 formed between the wire parts of the handle 7 so as to hold the handle in different angular relationships relative to the plate 21. The plate 21 has a sponge rubber pad 29 secured thereto by a suitable adhesive or other bonding agent and projects on all sides beyond the edges of the plate.

When the tooth 26 is engaged with the handle 7, the pad 29 and its plate 21 is at right angles to the handle in the position A shown in FIG. 6 relative to one of the window sashes W, the operator may stand inside the room in a position centrally of the window. When either of the teeth 27 is engaged with the handle, the pad 29

and its plate are disposed at an obtuse angle relative to the then outer side of the handle as shown in positions B and C in FIG. 6 which permits the operator to get into the corner portions of the window sash and move the device downwardly without materially shifting the operator's original position centrally of the window, which consequently saves the operator's time. The squeegee blade 15 is preferably somewhat longer than the pad 29.

The section 7A of the modified handle construction is adapted to have the squeegee structure shown in FIGS. 1 and 3 mounted thereof as described in connection with the handle 7 and the section 7B is adapted to take the pad structure shown in FIGS. 1, 4, and 5 as described in connection with the handle 7.

The device like others of its general type permits the washing of the window sashes by the working of the device in the space between such sashes, it being noted that the pad 29 is used to apply a cleasing liquid or water to the window to be cleaned and the squeegee used to take the moisture off the window being cleaned, the operator grasping the opposite end portion of the handle from that of the element then being applied to the window by pressure applied through said handle.

I desire it to be understood that this invention is not to be limited to any particular form or arrangement of parts except in so far as such limitations are included in the appended claims.

What I claim as my invention is:

1. In a window cleaner, the combination of a handle of greater than window sash length formed of a pair of longitudinally abutting elongated round wire portions joined together at longitudinally spaced points and having an eyed end, a metal plate, connecting means passing through the eye of the handle pivotally coupling the handle and the plate, said handle having a longitudinally extending indented portion intermediate said wire portions, and angularly spaced teeth on said metal plate on the side thereof facing the indented portion of the handle adapted to releasably engage said indented portion.

2. In a window cleaner, the combination of a handle of greater length than a window sash formed of a round wire bent back upon itself to present two adjacent parts in side by side relation that are joined together at spaced longitudinal points and having a loop formed therein where it is bent back upon itself, a metal plate having a medial portion of its inner side offset laterally to provide a slot through which said handle passes and a strap portion engageable with a side of said handle, a pin to pivotally connect the loop of the handle to the central portion of said plate, said handle presenting an indented portion intermediate said wire portions, and angularly disposed toothed projections formed in the plate adjacent said slot and facing the indented portion to releasably engage said indented portion of the handle.

3. In an elongated window cleaner having a squeegee at one end thereof and a sponge at the other end thereof, the combination of: an elongated handle formed of a round wire bent back upon itself to present two adjacent parts in side by side relation that are joined to one another at longitudinally spaced points to present an indentation between the adjacent parts, said wire having a loop formed therein where it is bent back upon itself and having its ends spread apart to extend normally of said handle; a squeegee support member rigidly mounted upon said spread apart ends of said wire handle and supporting said squeegee; a sponge support mounting said sponge and including a pivot pin connected to the loop of said handle to swivel with respect thereto; and a plurality of angularly spaced detents on said sponge support and projecting toward the indentation that are selectively engageable with said indentation of said handle to releasably hold said sponge support member in any of a plurality of angular positions relative to said handle.

4. The window cleaner as defined in claim 3, wherein the handle is formed of two substantially equal sections connected together by a detachable joint connection.

5. The window cleaner as defined in claim 3, wherein the handle is formed of two substantially equal sections in which one of the sections has a double tube joint connector and the wires of the other section have outwardly sprung ends to be received in the tubes of said double tube joint connector.

6. In an elongated window cleaner having a squeegee at one end thereof and a sponge at the other end thereof, the combination of an elongated handle formed of a round wire bent back on itself to present two adjacent parts in side by side relation that are joined together at longitudinally spaced points to present an indentation between the adjacent parts, said wire having a loop formed therein where it is bent back upon itself and having its ends spread apart to extend normally of said handle; a squeegee support member rigidly mounted upon said spread apart ends of said handle and supporting said squeegee; a sponge support member supporting said sponge and having a medial portion of its inner side offset laterally to provide a slot through which said handle passes and a strap portion engageable with a side of said handle, said sponge support member including a pivot pin connected to the loop of the handle to swivel with respect thereto; and angularly spaced toothed projections formed adjacent said slot and facing the indentation of the handle to selectively engage said indentation to releasably hold said support member in any of a plurality of angular positions relative to said handle.

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