July 28, 1942. C. F. ANDERSON ET AL 2,291,435

WINDOW CLEANER

Filed Aug. 10, 1939 2 Sheets-Sheet 1

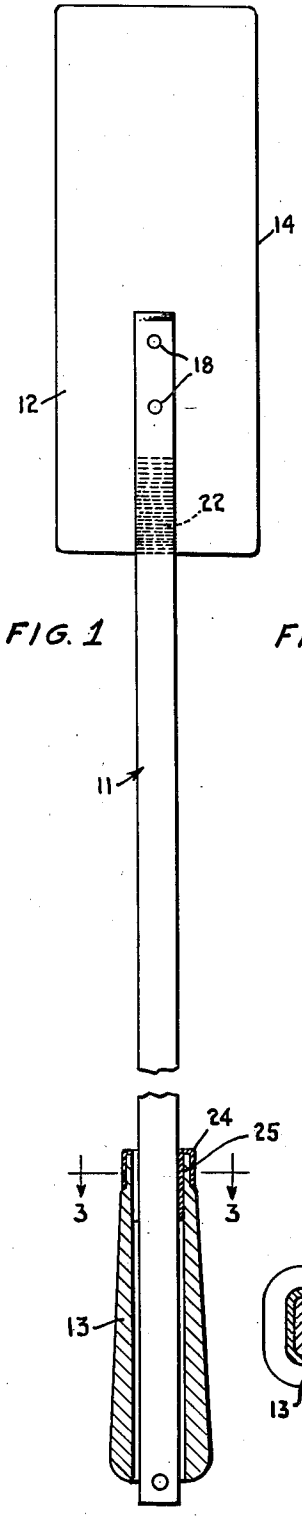


FIG. 1

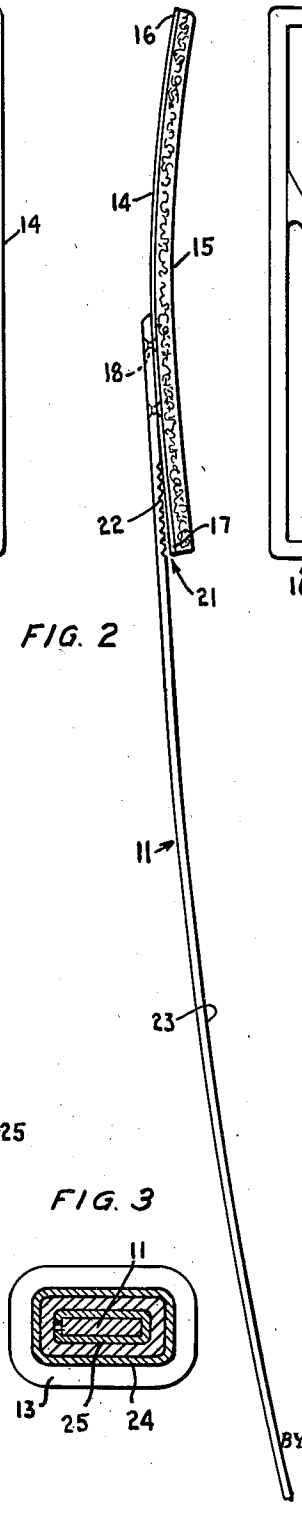


FIG. 2

FIG. 3

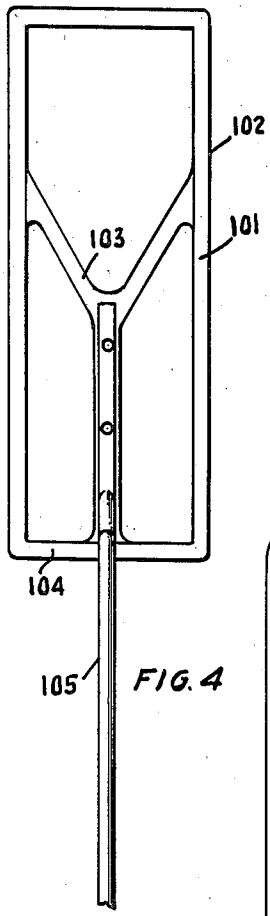


FIG. 4

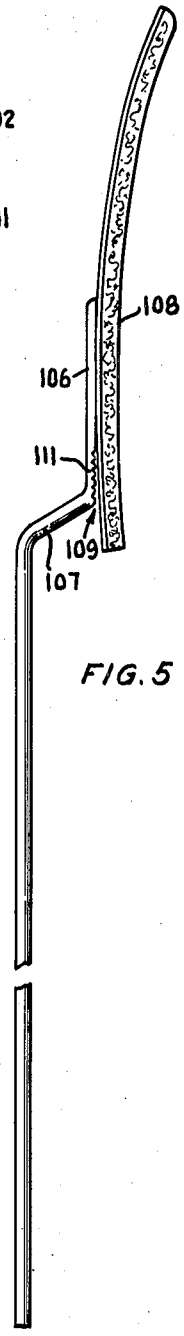


FIG. 5

INVENTORS
CHARLES F. ANDERSON
MICHAEL J. FREEMAN
M. Theodore Simmons
ATTORNEY.

July 28, 1942. C. F. ANDERSON ET AL 2,291,435

WINDOW CLEANER

Filed Aug. 10, 1939 2 Sheets-Sheet 2

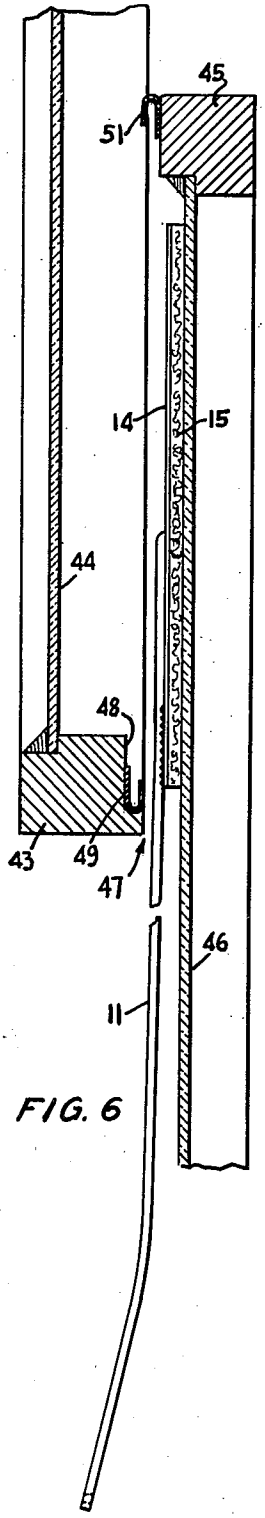


FIG. 6

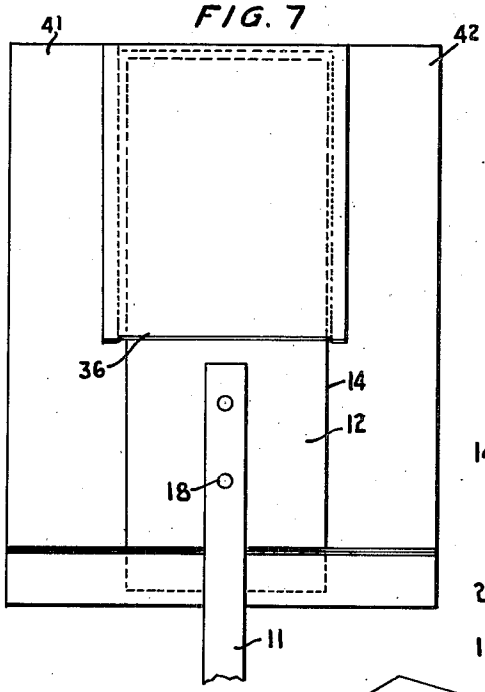


FIG. 7

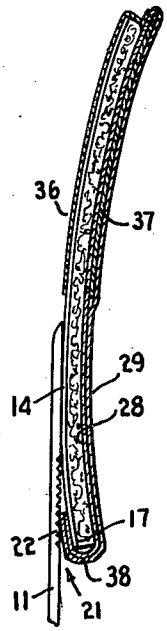


FIG. 8

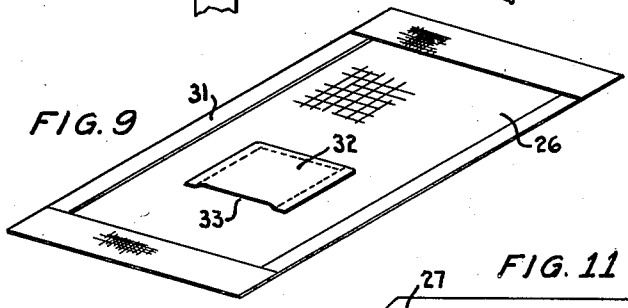


FIG. 9

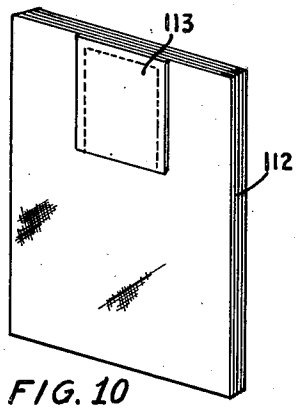


FIG. 10

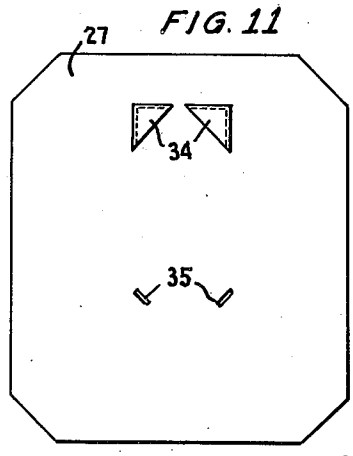


FIG. 11

INVENTORS
CHARLES F. ANDERSON
MICHAEL J. FREEMAN

BY

ATTORNEY.

Patented July 28, 1942 2,291,435

UNITED STATES PATENT OFFICE

2,291,435

WINDOW CLEANER

Charles F. Anderson, Brooklyn, and Michael J. Freeman, New York, N. Y.

Application August 10, 1939, Serial No. 290,954

6 Claims. (Cl. 15—220)

Our invention relates to apparatus to facilitate the cleaning of window panes, and more particularly to a device in combination with particular cloth arrangements which will enable the housewife or other person to clean window panes especially on the outside with greater facility and in the manner used by professional window cleaners.

Heretofore devices of this general character have been proposed, but such devices have been incomplete and not universally useable, as well as being complex to use and to operate, and expensive to manufacture. There have been other disadvantages too numerous to recite, but including inability to readily clean along the top edges of window sashes.

It is one object of our invention to provide a device of the above indicated character which can be used to thoroughly clean window panes, transoms, or the like, on the outside while the user remains standing or sitting on the inside of the window.

It is another object of our invention to provide a device of the above indicated character which will thoroughly clean window panes even though the window sashes overlap each other, and without danger of damaging either the device or any weather stripping with which the window may be equipped, or the paint of the window frame.

Still another object of our invention is to provide a device of the above indicated character with cloths which may be readily interchanged so that the windowpanes may be cleaned as effectively and efficiently as is done by professional window cleaners.

A further object of our invention is to provide a device of the above indicated character in which pressure is at all times applied at the top half of the device, as well as in the lower half thereof, irrespective of the height or place of use, so that the window pane can be properly cleaned around the frame without the necessity for a separate hand application of the cleaning or polishing cloths.

An even further object of our invention is to provide a device of the above indicated character that is adjustable in length so that the same device may be used with equal facility on various sizes and types of windows, etc.

A still further object of our invention is to provide a device of the above indicated character that in the natural positions and angles of use sufficient pressure will be properly and evenly distributed over the whole surface of the holder portion of the applicator with minimum effort on the part of the user.

Further objects of our invention are to provide a device of the above indicated character with novel and effective means for securing the various cloths in position upon the holder, and to provide a modified construction of applicator especially adapted for use upon casement types of windows.

Other and still further objects of our invention will be apparent from this specification taken in conjunction with the accompanying drawings, wherein—

Figure 1 is a rear view with parts broken away and parts shown in section to facilitate the illustration of our improved applicator.

Fig. 2 is a side elevation of the applicator of Fig. 1 with the handle omitted.

Fig. 3 is a cross section on the line 3—3 of Fig. 1.

Fig. 4 and Fig. 5 are respectively rear and side views of a modified form of device.

Fig. 6 is a view partly in section, showing the applicator of Figs. 1 and 2 in one position of use.

Figs. 7 and 8 are respectively rear and side views of the holder portion of the applicator with a cloth fastened in position.

Figs. 9 and 10 are perspective views respectively of the wetting cloth and polishing cloth; and

Fig. 11 is a rear view of a drying chamois.

Figs. 7 to 11 illustrate different methods of fastening the cloths upon the applicator.

Referring to the drawings, in which we have shown the best modes now contemplated of applying our invention, the applicator comprises a shaft 11 having a holder 12 at the upper end thereof, and a handle 13 adjacent the lower end thereof. In Figs. 1 and 2, the preferred form, the holder 12 comprises a plate 14, shown as rectangular although other shapes and sizes may be used, having on the face thereof a pad 15, of felt or other suitable substance. If desired, the pad may be omitted, but we prefer to use the same as a facing upon the plate 14. It will be noted that the plate is curved on a substantial radius from the top edge 16 to the bottom edge 17, which is true when the plate is not in use. The plate is resilient, being made of spring metal.

The shaft 11 is made of resilient flat stock and is secured to the plate 14 in any suitable manner, as by rivets 18. Round rod may be used for the shaft, and if used will preferably be flattened and tapered where it is applied to the plate.

The shaft 11 is fastened to the plate 14 so as

not to extend above the center or point of maximum arc of the plate, and at the same time, the rivets are placed well above the bottom edge 17 of the holder. Thus, a minimum of pressure will be required by the user to flatten the holder against the window pane, and also there will be a free space 21 between the holder and shaft for gripping the cloths, as will be explained hereinafter. The shaft 11 is provided with a plurality of transverse gripping notches 22 on that part next to the plate 14. The necessity with the whole construction is to keep the thickness of the applicator to a minimum for use in narrow spaces available in many instances.

The shaft 11 may be of any desired length, preferably sufficiently long that with the bottom sash raised, or the upper sash lowered, part way to a convenient height the user can easily reach the top of the window pane. To facilitate use, the shaft also has a curved middle portion 23, the curve also being on a large radius and extending from adjacent the bottom of the holder to adjacent the handle 13. The upper and lower ends of the shaft are substantially straight.

The handle 13 is tubular and is adjustable on the shaft 11. At its upper end the handle is provided with a ferrule 24, and an internal split collar 25 (Figs. 1 and 3). The collar 25 is of such size that it is spread slightly when the shaft 11 is inserted in the handle, so that there is a firm friction grip between the collar, the shaft and the handle, and the handle remains in the adjusted position. It will be understood that the collar 25 may be omitted and the opening in the handle could be of such size as to have a press fit with the shaft, or the adjustable feature could be omitted entirely, if desired.

Reference has heretofore been made to enable the user of this invention to clean windows in the same manner as professional window cleaners who use a burlap cloth for wetting the glass, a piece of chamois skin for removing the excess moisture and a lintless polishing cloth, such as "Hickory cloth." In the preferred form of our invention we propose to use all three cloths and to provide arrangements for rendering it convenient and easy for the user to interchange these cloths upon the holder. However, it is not essential that all three cloths be used. A burlap cloth 26 is shown in Fig. 9, a piece of chamois skin 27 in Fig. 11, and a pair of polishing cloths 28 and 29 are shown applied to the holder in Figs. 7 and 8.

In Fig. 9, the burlap 26 is provided with an edge binding 31, which is not essential, and on one-half thereof a pocket 32 is formed by sewing a piece of cloth to the burlap leaving one open side 33. The pocket is of such size as to enclose a substantial portion of the upper end of the holder 12, in the manner illustrated in Fig. 7. By the described arrangement, either the face of the burlap on the opposite side to the pocket 32, or the free end of the burlap 26 may be used for applying water or washing solution to the window. (Of course, the pad 15 could be used for that purpose, especially in the case of using the prepared window cleaning fluids now on the market.)

The chamois skin 27 illustrates two methods of attaching the cloths to the corners of the holder 12, either of which may be used to the exclusion of the other. At the top there is provided a pair of small triangular shaped pockets 34 of a size to fit upon the corners of the holder 12. At the bottom are shown a pair of diagonally disposed slits 35 so arranged that the corners of the holder engage in these slits under a slight tension due to stretching the cloth or chamois skin thereover. One only of such slits may be located in the cloth through which the shaft 11 may be passed, the cloth then being brought over the top of the holder, and across the face thereof with an edge portion being gripped in the space 21 as described in connection with Figs. 7 and 8. By any of the described methods the particular cloth is firmly secured upon the holder so that the same may be rubbed back and forth over the window pane without danger of detachment from the holder while the applicator is in use.

Figs. 7 and 8 illustrate another cloth arrangement and method of securing the cloths upon the holder. The opposite halves 28 and 29 of the polishing cloth are respectively provided with pockets 36 and 37, formed in the same manner as the pocket 32 in Fig. 9, so that both sides of each of the halves may be used against the window pane. In the position shown in Fig. 8, one side of portion 29 is outermost. If this portion is thrown over the back of the holder 12 the corresponding face of portion 28 will be used for polishing.

If the holder is inserted in the pocket 37, the opposite faces of the cloths may be used in the same ways. In these figures, it will be noted that the lower ends of the cloths are folded around the lower end 17 of the holder, as indicated at 38, and are forced between the plate 14 and the shaft 11, which securely holds the cloth in place and stretched over the holder, the notches 22 assisting in this result.

In the use of the applicator the user will obtain best results in the following manner; first, wet the burlap cloth 26 and dampen the polishing cloths 28 and 29; second, after inserting the holder 12 in the pocket 33 of the burlap cloth, rub the cloth over the window panes to thoroughly wet the surfaces (if desired the end of the burlap can be tucked into the space 21, but this is not always necessary when wetting the glass, the friction of the felt pad against the burlap being generally sufficient to hold the burlap on the holder); third, after withdrawing the holder from the burlap and substituting the chamois skin therefor, rub the same over the window surfaces to remove all excess moisture, and fourth, substitute the dampened polishing cloth for the chamois skin, inserting the holder in the pocket thereof and the free end in the space 21 behind the holder, and then rub the surfaces of the glass to bring the same to a polish. In this connection, some users may regard it as an advantage to use a well padded polisher, and with our improved applicator this can easily be accomplished by folding the sides 41 and 42 (Fig. 7) of the cloth across the face of the holder 12, which will provide several additional thicknesses of cloth in front of the holder.

We have described our preferred method of cleaning glass surfaces and the ease and facility with which the cloths can be substituted for each other. By following this method, a large number of windows can be cleaned at one time with one set of cloths, and without cleaning or wringing of the cloths.

The work of cleaning the glass surfaces is done easily by reason of the special construction of the applicator, to which attention will now be called. If the outer surface of the glass is being cleaned, so that the pad is faced toward the user, a very light and easy pressure on the shaft 11

will be sufficient to flatten the holder 12 against the glass so that the whole surface of the holder will be effective. The desired pressure to flatten the holder is readily obtained by a simple pressing of the forefinger against the back of the shaft 11, or by a very slight wrist motion in the plane of the shaft 11, which will apply pressure near the top of the handle 13. Yet this seemingly light pressure is ample to effect cleaning and polishing of the glass. Pressure on the shaft to flatten the holder is obtained by flexing the handle portion away from the vertical and away from the user, as indicated in Fig. 6. That pressure will be sufficient to bring the shaft to a flat or vertical position, and will be transmitted to the holder 12 in back of the plate 14 so as to flatten the same against the window pane. At the same time, the curve and resilience of the holder 12 is such that the upper and lower edges thereof always remain against the surface and exert full pressure along those edges even though the holder is used at the limit of reach of the user. If the plate were flat, instead of curved, this condition would not be true, because the applying pressure would not be distributed over the whole holder, with the result that the top and bottom edges would tend to, and would actually, leave the surface of the glass. Accordingly, such holders in the prior constructions are not as effective in cleaning along the window frame, or with the simplicity and fool-proofness of our improved applicator. In addition, the user remains inside the room and yet is able to clean and polish the entire outer window surface while remaining inside and without having to use any of the cloths in the hands, especially along the window frame. If the inside surface is being cleaned, so that the face of the holder 12 is away from the user, all the same advantages and results are obtained as described above, with the conditions reversed.

These same advantages are obtained also when cleaning surfaces of overlapping window sashes, and particularly in cases of double windows such as are used in trains, and when outer storm windows are used in a house. In addition, our improved construction has further advantages in these applications, which will be understood by reference to Fig. 6, where there is shown a portion of an upper window sash 43, having a pane of glass 44 therein, and a portion of a lower window sash 45, having a pane of glass 46 therein. The space 47 between these sashes is very narrow, but our construction is so thin that the applicator is easily inserted between the sashes with ample freedom for movement of the applicator.

This latter is facilitated by the curved construction of the shaft 11 which enables the necessary pressure to be readily applied to the shaft to flatten the holder 12, and at the same time the major length of the shaft, above the handle 13 is maintained substantially vertical and parallel with the flattened plate of the holder 12. Should the shaft 11 engage the frame 43 of the sash, even adjacent the holder 12, the frame would simply act as a fulcrum to apply the necessary pressure to flatten the holder against the outer surface of the glass 46 so that full cleaning could proceed even along the frame 45. Another advantage of our improved structure is that the same can be used without damaging weather stripping that may be attached to the frames. One form of such weather stripping is shown applied to the window sashes in Fig. 6. The lower cross piece of the upper sash is cut out, as indicated at 48, to receive a generally U-shaped metal strip 49. The upper cross piece of the lower sash carries a similar U-shaped, but inverted metal strip 51 which engages in the strip 49 when the window is closed. However, as can be seen, the use of the applicator will not damage the strip 49.

Another advantage of the particular arrangement described is that the user can apply all the necessary pressure for optimum results while moving the shaft 11 vertically and from side to side, and by reason of flexing the handle away from the vertical there is no danger of the hand striking the window frame. Reference has been made heretofore to the use of a separate handle, but that is not a necessary part of our invention, and the handle end of the shaft may be provided with an aperture, as shown, by which the applicator can be suspended when not in use.

As willl be seen from Figs. 1 and 2, the curve of the holder 12 and the curve of the shaft 11 are in the same direction with the handle angularly disposed to the latter curve. Applicators have been successfully used by use with the curve of the shaft in the reverse direction to the curve of the holder, which arrangement disposes the handle at an angle to the vertical. This arrangement has the limitation that the shaft can be inserted between window frames only to the limit of the location of the curve, so that the arrangement shown herein is our preferred arrangement.

A modified form of applicator especially applicable to deep window sashes and to casement types of windows is shown in Figs. 4 and 5. The holder 101 comprises a curved wire frame 102 having a Y-shaped brace 103 fastened respectively at approximately the horizontal medial line of the frame 102, and to the bottom 104 of the frame 102 at the vertical medial line.

The shaft 105 has a flattened end 106 which is appropriately secured to the vertical portion of the brace 103 in the same relative manner as described in connection with Fig. 1. The shaft 105 also has a rearwardly offset portion 107 adjacent the lower end 104 of the holder, and a space 109 is provided between the vertical portion of the brace 103 and the flattened portion 106 of the shaft for insertion of the lower ends of the cloths in the manner described in connection with Figs. 1 and 2, the flattened portion 106 being provided with gripping notches 111. A pad 108 is secured to the wire frame 102 in any suitable manner.

The shaft 105 need not be curved in the same manner as described in connection with Figs. 1 and 2, but will operate to apply pressure to the frame 102 through the brace 103 to flatten the same as described in connection with Figs. 1 and 2. It will be apparent that the offset portion 107 enables the holder to be flattened against the pane of glass notwithstanding a deep recess in the frame along the bottom of the plane of glass so that cleaning along the bottom edge of the glass can be readily accomplished. Of course, the wire frame 102 could be used in the construction of Figs. 1 and 2 in place of the flat plate holder, and vice versa.

Fig. 10 illustrates another arrangement of cloths especially useful where a large number of windows are to be cleaned in succession. A plurality of strips of cloth 112 are sewn together along the upper edges thereof, and a pocket 113, or other supporting means for the holder portion of the applicator, is formed on one of the cloths. With the holder inserted in the pocket 113, any of the cloths 112 may be applied to a window

pane, and as each cloth is used, it is merely thrown over the top of the holder and hangs in back thereof.

Reference has been made above to use of this invention by housewives and in individual homes. However, the invention is equally useful by professional window cleaners, apartment house superintendents, and the like, with the advantage that danger of falling from the windows is eliminated, as is the expense of special safety attachments on the windows, etc.

Other modifications may be made in the arrangement and location of parts within the spirit and scope of my invention, and such modifications are intended to be covered by the appended claims.

We claim:

1. An applicator for cleaning and polishing glass surfaces comprising a holder consisting of a flat substantially rectangular resilient member slightly curved from top to bottom and adapted to present a flat work surface to the glass, a resilient shaft fastened to the holder adjacent the center of the member and above the lower edge thereof, the shaft being curved, and a handle on the shaft.

2. An applicator for cleaning and polishing glass surfaces comprising a holder consisting of a flat substantially rectangular resilient member curved from top to bottom, a resilient shaft fastened to the holder adjacent the center of the member and above the lower edge thereof so as to leave a space between the shaft and holder to which edges of cleaning cloths mounted on said holder may be gripped, the shaft being curved in the same direction as the curve of the holder and both curves being on a large radius, and a handle on the shaft.

3. The combination for cleaning glass surfaces comprising a curved resilient cloth holder, a shaft fastened to the holder adjacent the center of the holder and above the lower edge thereof so as to leave a gripping space between the shaft and the holder, a handle on the shaft, a cloth, and means on the cloth for mounting the same on the upper portion of the holder, the cloth extending across the face of the holder with an edge portion of the cloth extending into said space and being held between the shaft and holder by the resilience of said holder.

4. The combination for cleaning glass surfaces comprising a curved resilient cloth holder, a shaft fastened to the holder adjacent the center of the holder and above the lower edge thereof so as to leave a gripping space between the shaft and the holder, a handle on the shaft, and a cloth having a pocket on one side thereof of a size to and receiving the upper end of the holder, the cloth extending across the face of the holder with an edge portion of the cloth extending into said space and being held between the shaft and holder by the resilience of said holder.

5. A cleaning cloth for use upon an applicator, said cloth comprising a plurality of sections secured together in overlapping relationship, a pocket on one of said sections for mounting the cloth on the applicator so that each section may be used individually and selectively.

6. An applicator for cleaning and polishing glass surfaces comprising a holder having an open-work substantially rectangular wire frame curved from top to bottom and adapted to present a flat working surface, a brace in said frame, a shaft connected to said brace, and a handle on the shaft.

CHARLES F. ANDERSON.
MICHAEL J. FREEMAN.