Oct. 24, 1933. R. W. ZIMMERMAN 1,931,786

METHOD OF ATTACHING A SCREEN

Original Filed Jan. 10, 1931

FIG. 1.

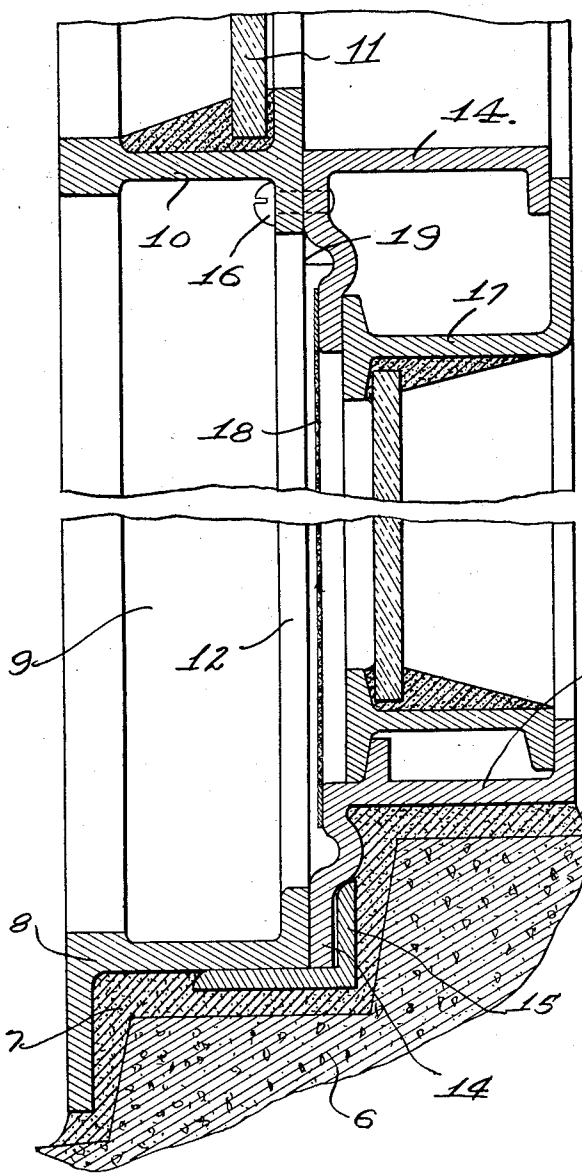


FIG. 3.

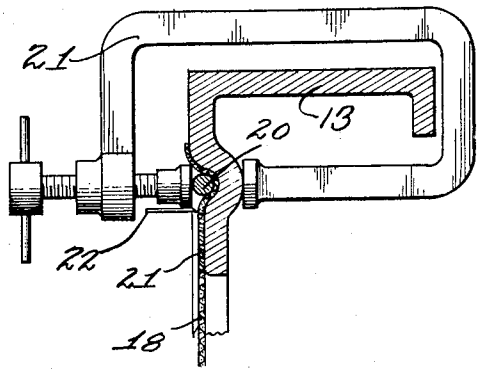


FIG. 4.

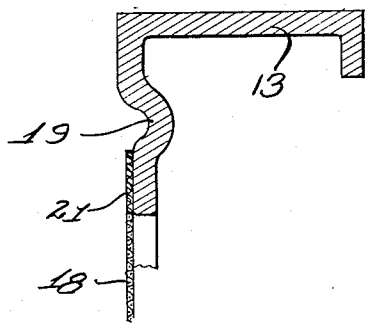


FIG. 5.

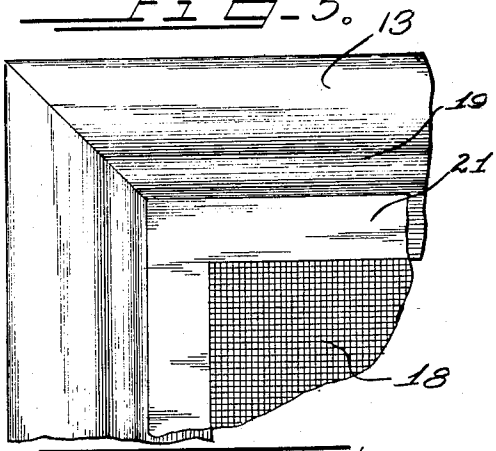
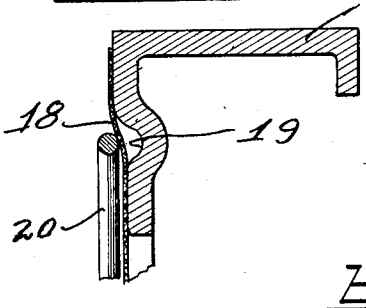


FIG. 2.



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METHOD OF ATTACHING A SCREEN

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Original application January 10, 1931, Serial No. 507,789. Divided and this application October 19, 1931. Serial No. 569,603

6 Claims. (Cl. 140—109)

This invention relates to improvements in a method of attaching screens, and more particularly to a method of attaching screens over sash frames for windows, and in any other places where substantially permanently mounted screens may be desired, the invention being highly desirable for such uses in connection with metallic sashes or frames, although the invention may have many and various uses and purposes as will be apparent to one skilled in the art.

The present invention may be used to great advantage in a window of the character set forth, described and claimed in my co-pending application for U.S. Letters Patent entitled "Window", filed January 10, 1931, Serial No. 507,789, and is, in fact, set forth to some extent in the aforesaid co-pending application, of which this application is a division.

As is pointed out more fully in my aforesaid co-pending application, as well as in my other co-pending application entitled "Window", Serial No. 469,969, filed July 23, 1930, it is highly desirable in various forms of detention buildings to provide windows for the building which, while thoroughly capable of functioning as a detention or restraining window, do not give the appearance of restraint to an observer. It is necessary, of course, that the inmate be provided with sufficient ventilation as well as light, and obviously, in most cases an attempted breaking would occur at that region of the window providing ventilation where the lights are removed or swung inwardly in a ventilating sash. Years of experience in institutions of confinement have proved that no window is infallible if the inmate is provided with the proper tools and equipment for breaking through the window. It is therefore of the utmost importance to have a simple expedient which, while in and of itself might not be sufficient to prevent an actual breaking of the window, will tell at the most casual glance that a breaking is being attempted, whereby the attempted breaking may be frustrated before consummated.

In my aforesaid co-pending applications, the above purpose was accomplished by the utilization of a permanently mounted screen over the ventilation opening, the screen being inside the integral bars or muntins of the window and, while preventing the entrance of insects and such, also prevented the passage of objects through the window in either direction, and at once revealed by a fracture in the screen any attempt towards breaking through the window.

The present invention also embodies the use of a permanently mounted screen or equivalent element over the ventilation opening in a window of confinement, but concerns itself more particularly with a new and novel method of mounting or installing such a screen.

Another object of the present invention is the provision of a method of mounting a screen by metallically binding the screen to a suitable frame in substantially any desired manner.

A further object of the invention is the provision of a method of mounting a screen on a sash frame eliminating the use of a separate permanently mounted frame or any similar screen holding medium.

A still further object of the present invention is the provision of a method of mounting a screen to a frame in such a manner that the screen cannot be removed without at least a partial destruction of the same.

In accordance with the foregoing, it will be noted that the present invention embodies a method which is highly advantageous for use in the installation of screens in factory buildings and the like, where it is frequently desired to eliminate all appearances of restraint and to provide screens that apparently are mounted in any customary and well-known manner, but which clearly indicate at a most casual glance any attempted passing of objects through the window in either direction. Obviously, the location of the attempted passing is also immediately revealed to the observer, thus aiding in establishing the guilt of the act. It is readily apparent, therefore, that the present invention may be used in practically any place and under any condition where a permanently mounted screen is desired, and is especially valuable when it is desired to know if any attempt has been made to pass anything through the screen.

While some of the more salient features, characteristics and advantages of the present invention have been above pointed out, others will become apparent from the following disclosures.

The invention includes these and other features of construction and combinations of parts hereinafter described, and shown in a preferred form on the drawing, as more particularly indicated by the claims.

On the drawing:

Figure 1 is a fragmentary vertical sectional view through a window embodying a screen mounted in accordance with principles of the present invention.

Figure 2 is a fragmentary sectional view of the upper right hand portion of Figure 1 and illustrating a step in the method of installing the screen.

Figure 3 is a view similar to Figure 2 illustrating a further step in the method of installation.

Figure 4 is a view similar to Figures 2 and 3 illustrating a still further step in the method of installation.

Figure 5 is a fragmentary front elevational view of the finished installation.

As shown on the drawing:

In the illustrated embodiment of the present invention, there is shown a wall 6 provided with a suitable window opening, and made of concrete or any other suitable material, a portion of which is formed in the nature of a sill overlaid by suitable caulking 7 which holds a stationary sash 8 in place. The sash 8 in this instance is provided with a plurality of vertically and horizontally extending muntins 9 and 10 respectively, which define a plurality of rectangles, certain of the rectangles being glazed with lights or panes 11, and certain of the rectangles being left open as indicated at 12.

Behind the open parts of the sash frame, a removable ventilator frame 13 is mounted, and held in position by means of a downwardly depending flange 14 slidable between the rear face of the sash 8 and an angle iron 15, and by means of a bolt or equivalent element 16 passing through a part of the sash frame 8 and the upper portion of the ventilator frame. Mounted to pivot inwardly from the opening in the ventilator frame 16, is a ventilator sash frame 17 suitably glazed, and adjustable to open or closed position in a manner more fully described in my aforesaid co-pending applications.

The present invention concerns itself with a method of attaching a screen to a frame, and in the illustrated instance, a screen 18 is attached to the ventilator frame 16 between the ventilator sash frame 17 and the sash frame 8, so that when the ventilator sash frame is in open position any endeavor to pass anything through the opening 12 of the sash frame 8 or to mutilate the muntins or sash frame will be indicated even to a most casual observer because such parts cannot be reached without first creating a fracture in the screen 8. As stated above, the ventilator frame 16 is removable, and the screen 18 is preferably attached thereto at the place of manufacture of the window and not at the job where the window is installed.

In accordance with the disclosed embodiment of the present method, the frame 16 is first taken and the screen laid loosely over the frame as best seen in Figure 2. It will be noted that the frame 16 has a peripheral groove 19 spaced inwardly from the peripheral edges of the frame. A temporary frame 20 of any desired material, a round rod being suitable, and of substantially the same general shape as the frame 16, is next placed upon the top of the screen 18, the temporary frame 20 being of the proper size to fit in the groove 19. Next, a suitable number of clamping elements 21 is placed at spaced intervals around the structure thus formed, and these clamping elements are tightened so as to force the temporary frame 20 into the groove 19, thus stretching the body of the screen 18 over the frame 16, as best shown in Figure 3. While the screen is under tension and stretched over the frame 16, a marginal portion of the screen is soldered directly to the metallic surface of the frame 16 just inside of the groove 19 as indicated at 21. After the soldering operation, any suitable form of sharp instrument, such as the knife edge 22, is used to trim off the outer margin of the screen beyond the solder, and the clamps are released, the temporary frame removed, and the trimmed screen margin discarded, leaving a straight flat sheet of screen soldered directly to the frame 16. Of course, it is immaterial whether or not the clamping elements and the temporary frame are removed prior to the trimming off of the outer edge of the screen or after the cutting of the screen.

It should be noted that herein and in the appended claims where the term "soldered" or a similar term is used, it is to be construed as meaning soldering, welding, brazing, or any equivalent operation for metallically binding the screen to the frame.

From the foregoing, it is apparent that I have provided a new and novel and very expeditious method of permanently mounting a screen or equivalent element to a frame having a metallic surface. It will also be noted that when the screen is mounted in accordance with this method, the resulting appearance is pleasing to the eye and to the ordinary observer the screen does not appear to have a distinctive mounting over any of the well-known methods of installing screens. Furthermore, it is at once evident that the screen may be installed in accordance with the principles of this invention efficiently, very economically, and in a manner that will add to the normal life of the screen.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon otherwise than is necessitated by the prior art.

I claim as my invention:

1. The method of attaching a screen to a frame, consisting of first placing the screen over the permanent frame, inserting a temporary frame over said screen in a peripheral groove in said permanent frame to stretch said screen, soldering said screen while stretched directly to said permanent frame and removing said temporary frame.

2. The method of attaching a screen to a metallic frame, consisting of placing a stretching medium over said screen in a groove in said frame, soldering said screen to said frame inwardly of said groove, and removing said stretching medium.

3. The method of attaching a screen to a sash frame having a metallic surface, and a groove therein spaced from the inside edge of the frame, consisting of first placing the screen over said frame, pressing a temporary frame over said screen into said groove to stretch and

hold said screen in position, soldering said screen to said frame inside of said groove, removing said temporary frame, and trimming the outer free margins from said screen.

4. The method of attaching a screen to a sash frame having a metallic surface consisting of first placing the screen over said frame, crimping the edges of the screen so as to stretch the intermediate portion, soldering said screen to said frame inside of said crimped edge, and trimming the outer screen margins from said screen.

5. The method of attaching a screen to a sash frame having a metallic surface consisting first of placing the screen over said frame, causing the edge of the screen to travel through a tortuous path so as to stretch the intermediate portion, soldering said screen to said frame, and trimming the outer margins from said screen.

6. The method of attaching a screen to a sash frame having a metallic surface and a curved surface from the inside edge of the frame, consisting first of placing screen over said frame forcing the screen to follow the contour of said curved surface so as to stretch and hold said screen in position, and soldering said screen to said frame inside of said curved surface.

RALPH W. ZIMMERMAN.