Aug. 3, 1926. 1,595,018

H. C. MILLS

COMBINED FRAME WINDOW AND SCREEN

Filed Nov. 18, 1925 2 Sheets-Sheet 1

Fig. 1.

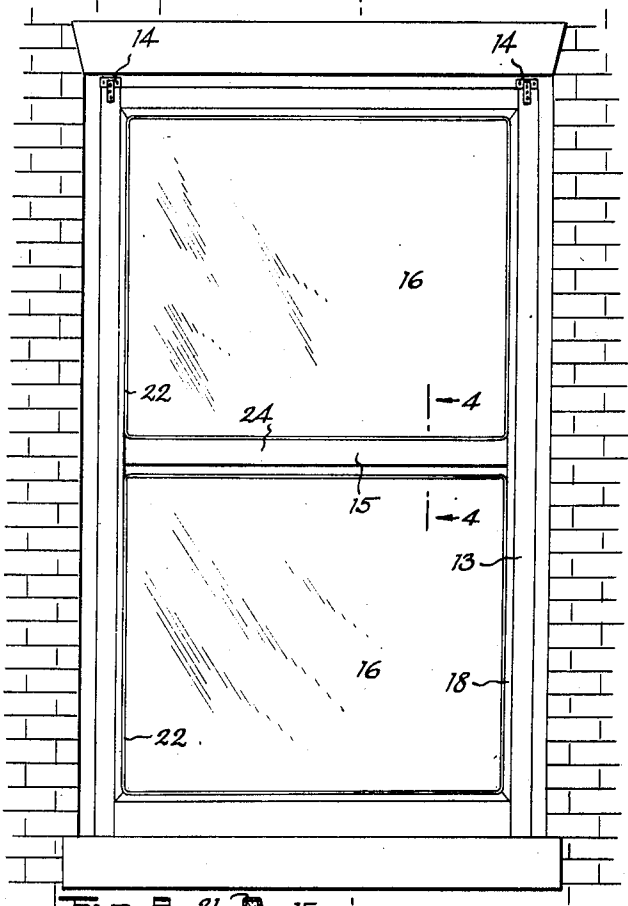


Fig. 2.

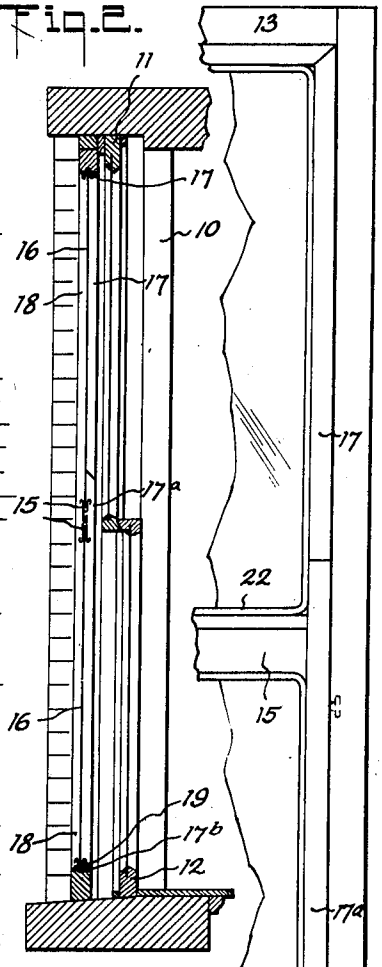


Fig. 3.

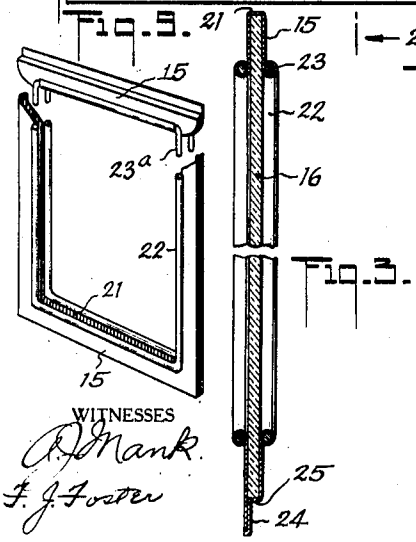


Fig. 4.

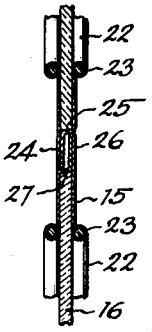


Fig. 5.

WITNESSES

R. D. Mank.

F. J. Foster

INVENTOR

HENRY C. MILLS

BY Munn & Co

ATTORNEYS

Aug. 3, 1926. 1,595,018

H. C. MILLS

COMBINED FRAME WINDOW AND SCREEN

Filed Nov. 18, 1925 2 Sheets-Sheet 2

Fig. 6.

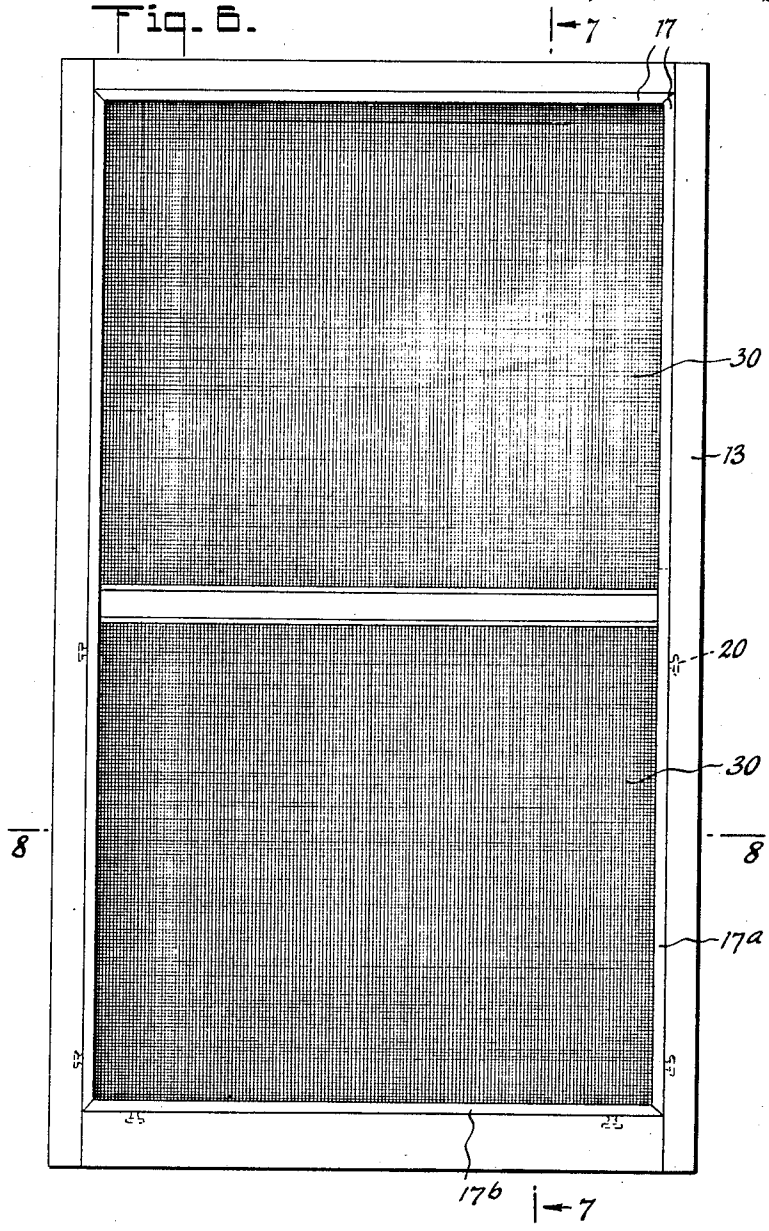


Fig. 7.

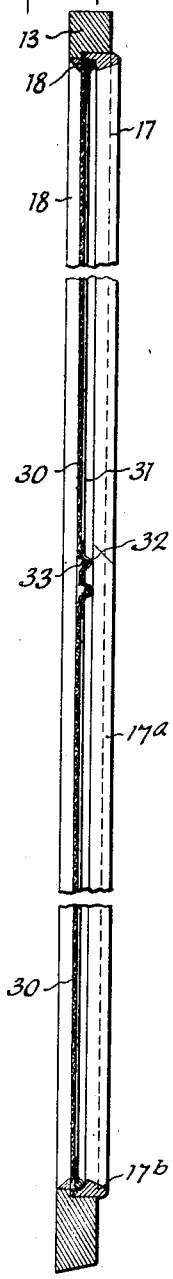
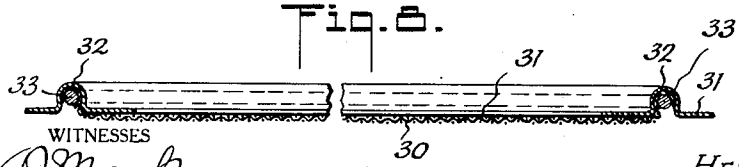


Fig. 8.



WITNESSES

J. Mank

F. J. Foster

INVENTOR

HENRY C. MILLS

BY Munn & Co

ATTORNEYS

Patented Aug. 3, 1926.

1,595,018

UNITED STATES PATENT OFFICE.

HENRY C. MILLS, OF CLEVELAND, OHIO.

COMBINED FRAME WINDOW AND SCREEN.

Application filed November 18, 1925. Serial No. 69,893.

The device of the present invention is adapted for use interchangeably as a storm window or a fly screen. It preferably includes a frame member adapted to be permanently secured in a window frame outside of the usual sliding sashes, and to removably mount framed glass sections, or framed wire mesh screens in accordance with the desire of the user.

An object of the invention is to provide a device of this character in which the glass and screen may be interchanged at will without the necessity for using special tools, and without requiring the services of a mechanic, it being merely necessary to raise the usual lower sliding sash to make such changes.

A further object of the invention is to mount the glass sections and screen sections in beaded metallic frames which will occupy a minimum of space during storage, and frames which will securely interlock with each other, and with the wooden frame when in operative position.

A further object is to so construct the beaded metallic frames that either the glass or the screen may be readily replaced in case of breakage.

Still another object of the invention is to provide a combination frame window and screen which will be of simple, practical construction, which will be rugged and durable in use, and which may be manufactured with comparative economy, and which may be readily applied to any ordinary type of window embodying a sliding sash.

With the above noted and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter set forth and pointed out in the claims. The invention may be more fully understood from the following description in connection with the accompanying drawings, wherein—

Fig. 1 is a view in outside elevation of a window showing the device of the present invention in place.

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged broken vertical sectional view through one of the glass sections of the storm window.

Fig. 4 is an enlarged sectional detail on the line 4—4 of Fig. 1.

Fig. 5 is an enlarged fragmentary view in interior elevation showing the appearance of the storm window from the inside.

Fig. 6 is a view in interior elevation of the device when the glass has been replaced by wire screen sections.

Fig. 7 is an enlarged longitudinal sectional view on the line 7—7 of Fig. 6.

Fig. 8 is an enlarged broken transverse sectional view on the line 8—8 of Fig. 6.

Fig. 9 is an exploded perspective view of one of the frames for the glass window.

In the drawings, reference character 10 indicates a conventional window frame in which an upper sliding sash 11, and lower sliding sash 12 are mounted in the usual manner. On the outside of the sliding sashes I mount a rectangular wooden frame member 13. This frame member extending the full length and breadth of the window, may be hung on the conventional hangers 14 shown in Fig. 1. The metallic frame sections 15 carrying plates 16 of window glass are adapted to be mounted between outer molding strips 18, and inner molding strips 17, these strips co-operatively forming a groove 19 in which the edges of the frames 16 are received. The inner molding strips or stop strips 17 include removable lower side sections 17^a, and a removable bottom section 17^b which are engaged with the frame 13 as by snap fastener elements indicated in dotted lines at 20.

Two metallic frame members are provided, and to permit their insertion, the lower sliding sash 12 is raised. The detachable molding sections 17^a and 17^b are removed. The upper frame 15 is slid into position into the groove 19 defined between the upper portions of the molding strips 17, 18, and the lower frame section 15 is then inserted to block downward sliding movement of the upper frame section 15, after which the removable molding strip sections 17^a and 17^b are replaced.

It will be evident that I may resort to numerous expedients in the construction of the frames 15. I prefer however, that these frames be of metallic construction including outer channel portions 21 receiving the edges of the glass 16 and accommodated in the groove 19. The edges of the metal which defines the channel portions are rolled over or beaded as to 22, and may be reinforced by suitable wire fillers 23. It will be noted

that the lower edge of the upper section 15 is formed with a depending flange 24 at its forward edge, defining a shoulder 25. An upstanding flange 26 at the inner side of the upper edge of the lower frame 15 abuts the shoulder 25 and defines another shoulder 27 against which the flange 24 rests, whereby the upper frame section is securely supported on the lower frame section.

In Fig. 9 I have shown the sectional construction of the metallic frame which permits the glass sheets to be readily replaced when breakage occurs. Here an end section 15^a of the frame is bodily removable and the stub ends 23^a of the reinforcing wire which it carries are adapted to be sprung into the ends of the hollow beads 22 on the main body of the frame.

In Figs. 6 to 8 inclusive, I have shown the glass sections removed and replaced by sections 30 of wire mesh mounted in metallic frames 31. The frames 31 are formed of flat metallic strips having longitudinal grooves or channels 32 pressed inwardly therefrom. As seen in Fig. 7 when the two frames are mounted in place, one of the channels 32 acts as a stop against which the edge of the other frame 31 abuts, whereby the upper screen section is sustained by the lower screen section. It will be understood of course, that the manner of applying the screen sections is the same as that heretofore described in connection with the application of the glass sections, and that the same molding strips 17, 17^a, 17^b and 18 are used.

A feature of the invention is the manner by which I attach the wire mesh 30 to the frames 31. I find this can be conveniently accomplished by cutting a section of wire mesh approximately the size of the frame 31, or at least of sufficient width to overlie the channels 32. By forcing or springing a wire 33 into the channels, the edges of the screen are securely held without the use of tacks or other conventional securing devices.

It is quite obviously within the scope of the invention to vary the construction, either of the frames for the glass, or the frames for the screens, and it is to be understood that numerous changes and alterations might be made in the general form and arrangement of parts described, without departing from the invention. Hence I do not wish to limit myself to the details set forth, but shall consider myself at liberty to make such changes and alternations as fairly fall within the spirit and scope of the appended claims.

I claim—

1. In a combined storm window and screen, a window frame adapted to be supported outside of the usual sliding sashes, inner and outer molding strips mounted within the frame and defining a channel adapted to receive the edges of glass or screen frame sections, the lower portions of the inner side moldings, and the inner bottom molding being removable to permit the insertion of a frame section in place, so that it may be slid upwardly into position at the top of the frame, and provide clearance for the insertion of a second frame section thereunder.

2. A device of the class described in claim 1, wherein the upper and lower frame sections include overlapping edges and abutting portions whereby the upper frame section is supported on the lower frame section.

3. In a combination storm window and screen, a window frame, molding strips defining a channel for the reception of a framed window pane or screen, portions of said molding strips being removable to permit the insertion of said framed window or screen between the molding strips.

4. A device of the class described in claim 2, wherein portions of the molding strips are connected to the window frame by snap fasteners.

HENRY C. MILLS.